Volume 7, Issue 2
SOLAR ECLIPSE NEWSLETTER

February 2002

SOLAR ECLIPSE NEWSLETTER

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The Solar Eclipse Mailing List

The Solar Eclipse Mailing List (SEML) is an electronic newsgroup dedicated to Solar Eclipses. Published by eclipse chaser Patrick Poitevin (patrick_poitevin@hotmail.com), it is a forum for discussing anything and everything about eclipses.

Thanks to the voluntary efforts of Jan Van Gestel of Geel, Belgium, the Solar Eclipse Mailing List (listserver) has been in operation since 10 December 1997. This is the first mailing list devoted solely to topic of solar eclipses on the internet.

You can send an e-mail message to the list server solareclipses@Aula.com, which will then forward your e-mail to all the subscribers on the list. Likewise, you'll receive e-mail messages that other subscribers send to the listserver. Only subscribers can send messages.

The sole Newsletter dedicated to Solar Eclipses

Dear All,

It has been very busy lately. As you all might know in the meanwhile, Joanne and I got married on 2 February 2002. It was a perfect wedding and we had a wonderful honeymoon as well. Thank you all for the nice wishes and the beautiful messages.

Fred Espenak was our best man and we visited together the city Winchester, the day before the wedding. Of course we could not resist to visit The Eclipse Inn in the shadow of the famous Cathedral and had a few beers and a nice English meal.

After the wedding we went to Southern California and besides the surroundings of LA (Monica Beach, Malibu, Disney, Hollywood, Beverly Hills, etc., etc.), and we visited Death Valley and Las Vegas.

Although California is spread out with many astronomical attractions, including many solar observatories, we kept it brief on that side and visited our friend Ed Krupp in the Griffith Observatory. The Observatory is just closed for restoration since mid January and will be re-opened in 2005. Though, Ed showed us all in detail.

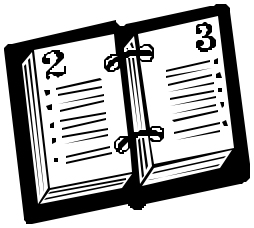
Back to real live and catching up the SEML messages, finishing this SENL issue and start preparing the next SE's and as well the next TD and SEC.

Enjoy this February SENL issue and ... keep those solar eclipse related messages coming... The next issue will be soon on this Web Page.

Best regards,

Patrick and Joanne Poitevin—Edmonds

SECalendar



FEBRUARY

Dear All,

Please find herewith the solar eclipse calendar for February. If you have any additional information, queries or remarks, please drop me a mail.

February 02, 1907 Death of Dmitri Ivanovich Mendeleeff (1834-1907), Russian. Uses a balloon to ascend above the cloud cover to an altitude of 11.500 feet (3.5 km) to observe an eclipse in Russia. (Ref Rc 1999)

February 02, 1998 ACE (US) starts observation of solarwind research. Ref. DD 2/99.

February 02, 2002 Joanne Edmonds and Patrick Poitevin, both eclipse chasers, editors of the SENL, listowners of the SEML and organisers of TD2003 and SEC2004, are getting married

February 03, 1965 Launch of OSO 2 (US). Studied solar flames and influence of it on earth. Ref. DD 2/99.

Michael, PP, Joanne, Fred and Laura on 2 February 2002

February 05, -0001 (2 BC) A Partial Solar Eclipse on Feb. 5 of the year 2 BC in Chang-An, the capital of the Han Dynasty in China, was seen as a good omen for Confucianist Wang Mang, who would soon wrest control of the government from the reigning emperor. Ref. Rudi Thomsen, Ambition and Confucianism, A Biography of Wang Mang. And F.R. Stephenson, Atlas of Historical Eclipse Maps, East Asia 1500 BC to AD 1900. (Ref. ENB10)

February 05, 1934 Minor planet (3707) Schröter 1934 CC. Discovered 1934 February 5 by K. Reinmuth at Heidelberg. Named in honor of Egon Horst Schröter (1928-), German solar astronomer and director of the Freiburg Kiepenheuer-Institut, on the occasion of his retirement. In 1976 he succeeded K.-O. Kiepenheuer at the Freiburg Institute for Solar Physics. An important achievement during his directorship consisted in negotiations about the erection of two new tower telescopes at Teide Observatory on Tenerife, Canary Islands. Schröter served as president of the Astronomische Gesellschaft from 1987 to 1990. In 1978 he became a member of the German Committee in COSPAR. (M 22499) Name proposed and citation prepared by J. Schubart, endorsed by G. Klare and L. D. Schmadel. Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg

February 06, 1612 Death of Christophorus Clavius (Christoph Klau), German mathematician and astronomer. He observed the total solar eclipse of 1567 and observed the corona. Born in 1537. Ref. DD 2/99

February 07, 1824 Birth of William Huggins, British amateur astronomer. He built his own observatory on Tulse Hill, 8 km out of London. He discovered emission lines of hydrogen. In 1875 he observed together with his wife Margaret L. Murray. He studied further the spectra of planets and the solar corona, where he showed the hydrogen lines as well in 1876. Died in 1910. Ref. DD 2/99.

February 07, 1834 Birth of Dmitri Ivanovich Mendeleeff (1834-1907), Rusian. Uses a balloon to ascend above the cloud cover to an altitude of 11.500 feet (3.5 km) to observe an eclipse in Russia. In the Royal Society they mention as well 7 as 8 February

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1834. (Ref. Rc 1999).

February 08, 1984 Minor Planet (3315) Chant 1984 CZ. Discovered 1984 February 8 by E. Bowell at Anderson Mesa. Named in memory of Clarence Augustus Chant (1865-1956), generally referred to as the "father of Canadian astronomy". A renowned teacher, Chant organized the Astronomy Department of the University of Toronto and built up the Royal Astronomical Society of Canada. He participated in five solar eclipse expeditions, the most important being the one he led to Australia in 1922 to test Einstein's {see planet (2001)} prediction of the deflection of starlight by a massive body. (M 12210) Name proposed by the discoverer following a suggestion by P. M. Millman. Chant is also honored by a lunar crater. Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg

February 08, 1994 Minor Planet (7436) Kuroiwa 1994 CB2. Discovered 1994 February 8 by K. Endate and K. Watanabe at Kitami. Named in memory of Goro Kuroiwa (1912-1990), Japanese astronomer and observer of variable stars. A student in the department of astronomy at the University of Tokyo on the occasion of the total solar eclipse on 1936 June 19, he independently discovered the nova CP Lac, along with Kazuaki Gomi {see planet (7035)}. While serving with the Japanese army in 1942 he independently discovered the nova CP Pup. He represented Japan in the geodetic survey program using photoelectric observations of lunar occultations, carried out from 1950 to the 1960s by the U.S. Army Map Service Far East. (M 34343) Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg

February 08, 2003 Next and second Totality Day will be held in the Open University of Milton Keynes, England. Organizers Joanne Edmonds and Patrick Poitevin welcome lectures, posters or trade offers for TD2003.

February 11, 1868 Death of Jean Bernard Leon Foucault (1819-1868), French physicist. Photographed the sun and measured the speed of light together with (Armand) Hippolyte Louis Fizeau (1819-1896). (Ref. Rc 1999)

February 11, 1988 Minor planet (6001) Thales 1988 CP2. Discovered 1988 February 11 by E. W. Elst at La Silla. Named for the famous Greek philosopher Thales of Miletus (c.625-547 B.C.). None of Thales' writings has come down to us, but from Aristoteles {see planet (6123)} we know that he was the first to suggest a single substratum (water) for the Universe. The correct prediction of the solar eclipse of -584 May 28 contributed considerably to his reputation as an astronomer. Thales' significance, however, lies in the fact that he attempted to explain natural phenomena by causes within nature itself, rather than by caprices of anthropomorphic gods. He must be credited with at least five important geometrical theorems. (M 24766) Thales is also honored by a lunar crater. Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg

February 12, 1431 "In (the month of) Jumada al-Ukhra, the astrologers warned that the Sun would be eclipsed, and in Cairo there were callings to the people that they should pray and do good deeds. However, the eclipse did not occur and those who gave the warnings were denounced. Then news arrived from al-Andalus (Islamic Spain) of the occurrence of an eclipse there covering all of the Sun's body except one-eight of it. That was after midday on the 28th of the month." From: Al-Maqrizi, al-Saluk fi Ma'rifat Duwal al-Muluk. " In (the month of) Jumada al-Ula it was known that the calendar experts agreed that the Sun was to be eclipsed on the 28th of the month after the Zawal (i.e. after the Sun had crossed the meridian). The Sultan and the people were prepared for it and were watching the Sun until it set but nothing of it had changed at all." From: Al-'Asqalani, INBA' AL-Ghumr bi 'Bna' al-'Umr. These two quotations refer to total solar eclipse, expected in Cairo, but visible in Spain, of 12 February 1431. Quoted in Historical Eclipses and Earth's Rotation, by F Richard Stephenson, Cambridge University Press, 1997, page 446.

February 12, 1431 "On February 12 at about the 21st or 22nd hour, the Sun was completely obscured and in front of the Sun was placed a black circle like a little wheel. It became as dark as night and the sky revealed the stars. The birds went to roost as they usually do at night. Everyone was feeling ill at ease as a result of this event. It began half an hour before the Sun was covered over. It gradually lost its light even to the hour stated above. . ." Refers to a total solar eclipse in Perugia, Italy, of 12 February 1431. From: Antonio dei Veghi, Diario dall'anno 1423 al 1491. Quoted in Historical Eclipses and Earth's Rotation, by F Richard Stephenson, Cambridge University Press, 1997, page 408.

February 12, 1831 The black slave preacher Nat Turner witnessed an annular solar eclipse. It was a vision from God of a "black angel" overtaking a "white angel". The fomenting slave rebellion gained impetus and on August 13 Turner saw another spectacle - a naked eye sunspot. The rebellion began on August 21 but was quickly crushed and Turner hanged.

February 12, 1893 Marcel Minnaert (1893 - 1970) studied biology at the University of Ghent in his native Belgium and physics at

(Continued on page 4)

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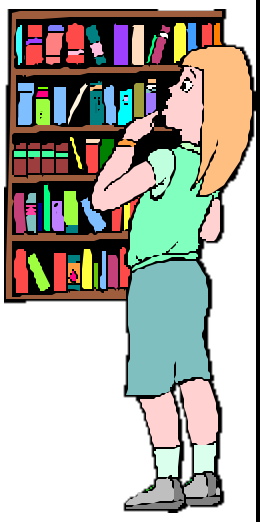

the University of Leiden in the Netherlands. Minnaert published a collection of poems related to astronomy and popular books on light and color and physics of the open air. He gave a lot of explanations in regard of effects with solar eclipses.

February 13, 1988 Minor Planet (4705) Secchi 1988 CK. Discovered 1988 February 13 at the Osservatorio San Vittore at Bologna. Named in memory of Angelo Secchi (1818-1878), Italian astronomer, director of the observatory of the Collegio Romano in Rome from 1848 to 1878. Famous for his work on stellar spectroscopy, he made the first spectroscopic survey of the heavens, and his classification scheme divided the spectra of the stars into four groups. Secchi also made an extensive study of solar phenomena and was a co-founder of the Società degli Spettroscopisti Italiani, now the Società Astronomica Italiana. (M 20160) Secchi is also honored by craters on Mars and on the Moon. Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg

February 14, 1779 Death of James Cook (1728-1779), British circumnavigator and one of the first scientific navigators. He observed the Solar Eclipse of 1766 August 5 from Newfoundland and in 1769 measured the transit of Venus from Tahiti. (Ref. Rc 1999)

February 14, 1953 Last solar eclipse on Valentine's Day. This century was blessed with Valentine's Eclipses. There was a partial solar eclipse in 1953, a total solar eclipse in 1934 and an annular eclipse in 1915. Unfortunately, we do have to wait till 2306 and 2325 for the next Valentine Solar eclipses. Both will be Total Solar Eclipses.

February 14, 1980 Launch of Solar Maximum Mission, American Solar mission which achieved important results.

February 14, 1996 SOHO, European Solar mission reaches observation place: lagrangepoint L1.

February 14, 2325 A region near 29 degrees East and 23.5 degrees North, in the dessert of southern Egypt, will see five total solar eclipses in a span of 31.8 years during the 24 th century: 14 February 2325, 20 June 2327, 5 February 2334, 31 July 2353, 23 November 2356. Ref. JM 9/99.

February 15, 0538 The first solar eclipse recorded in Britain, described in the Anglo-Saxon Chronicle; it occurred four years after the death of Cerdic, first king of the West Saxons. The Sun was two-thirds eclipsed in London.

February 15, 1564 Birth of Galileo Galilei. During a short stop of his parents in Piza, Galileo was born. His father, Florentine Vincenso Galilei was musician. He died in 1642. (ref. De jonge Galilei, Davidfonds nr. 341)

February 15, 1858 Birth of W. Pickering, American astronomer. Discovered satellite of Saturn Phoebe. Predicted in 1909 the existence of Pluto, observed also the Moon, Mars and Solar Eclipses.

February 15, 1961 Dr. Menzel notes that television coverage was excellent, and almost everyone in Europe could view the eclipse in one way or another. It was Galileo's birthday, and a 45 minute television program reviewed his contributions and those of other Italian and European scientists toward our present understanding of the sun. (ref. SaT 4/1961p191)

February 15, 1961 Russians studied for the first time the solar corona and upper-atmosphere phenomena during an eclipse from high-altitude stabilized platforms. On eclipse day, about noon, Russian scientists launched a series of rockets from an undisclosed base in the zone of totality. (ref. SaT 6/1961p328)

February 15, 1961 The first attempt to show a total solar eclipse on television from several stations along the track was made by the BBC at the eclipse of February 15, 1961. The track passed from France through Italy and former Yugoslavia, and thence into Russia. The attempt was successful and totality was shown from France, Italy and Yugoslavia. In eastern Yugoslavia, the place Nis, a TV camera was placed at 4900 foot. Patrick Moore failed to broadcast the event. (ref. SaT 4/61 p 203)

February 15, 1961 The German astronomer K. O. Kiepenheuer, who was director of the Fraunhofer Institute at Freiburg, went to Laigueglia, Italy, a little village not far from Imperia. He had 3 small cameras for studying the structure of the inner corona, which he wished to correlate with surface features on the sun. His party had a dictaphone on which to record their impres-

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sions, but during totality the observers were so preoccupied they forgot to talk! Later, when the recording was played back, it had one startling feature: Birds twittered distinctly in the background up to the beginning of totality, when these sounds stopped suddenly. Immediately after totality, the birds became active again. (ref. SaT 5/1961p264)

February 15, 1961 Widely viewed through southern Europe. Observed Total Eclipse by W. Carton, J. Meeus, Partial phase observed by F. Verbelen. F. Schmeidler (Germany) tried again in Italy on deflection of starlight (relativity tests). Sun was too low. Tried in earlier and later Eclipses. Poland observed during Part (94%) with reaction of bees, masse, moths, butterflies (confirmation of earlier Eclipse observations) by Wojtusiak and Majlert.

February 15, 1973 Launch of Prognoz 3, Russian mission for research of Solar and röntgenrays.

February 16, 0538 "The sun darkened on February 16th from dawn until nine in the morning." Refers to a solar eclipse in AD 538. From: The Anglo Saxon Chronicles translated and collated by Anne Savage, CLB Publishing Ltd. Ref FE 01/01

February 16, 1086 "On the sixth day of the month of February between the sixth and ninth hours the Sun was obscured for the space of three hours; it was so great that any people who were working indoors could only continue if in the meantime they lit lamps. Indeed some people went from house to house to get lanterns or torches. Many were terrified." Refers to a solar eclipse of 16 February 1086. Goffredo Malaterra, Chronicle of the Norman rule in Sicily and southern Italy during the 11th century. Quoted in Encyclopedia Britannica CD 98.

February 16, 1980 The only cricket match to have been interrupted by an Eclipse of the Sun was the Jubilee test between India and England on February 16, 1980. A Solar Eclipse was due that afternoon, and the Indian Board, in agreement with the English team, did not want the responsibility of a crowd of 50.000 damaging their eyes by looking at the Sun when the Eclipse began. The Test Match continued on the next morning.

February 18, 1977 Minor planet (5082) Nihonsyoki 1977 DN4. Discovered 1977 February 18 by H. Kosai and K. Hurukawa at Kiso. Named for the chronicles of Japan from the earliest times to 697, written in Chinese and completed in 720. It was the first historical record compiled by the Japanese government and contained records of various astronomical phenomena, such as appearances of seven comets (including the 684 return of P/Halley), 13 solar eclipses (e.g. in 628), occultations of stars and planetary phenomena. It was translated into English by W. G. Aston and published under the title of Nihongi. {See also the citation for planet (5454)}. (M 22506) Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg

February 19, 1993 Minor planet (8387) Fujimori 1993 DO. Discovered 1993 February 19 by T. Seki at Geisei. Named in honor of Kenichi Fujimori (1934-), an amateur astronomer who observes sunspots, faculae and prominences. A formal observer designated by the Sunspot Index Data Center, he served as director of the solar section of the Oriental Astronomical Association from 1971 to 1978. (M 33388) Name proposed by the discoverer following a suggestion by T. Sato and A. Fujii. Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg

February 20, 1990 Minor Planet (5403) Takachiho 1990 DM. Discovered 1990 February 20 by Y. Kushida and M. Inoue at Yatsugatake. Named for the home town of the wife of the second discoverer, Takachiho is located at the center of Miyazaki prefecture in Kyusyu, some 900 km southwest of Tokyo, and surrounded by mountains. Takachiho is famous for its legends and myths on the root of gods. The most famous is the legend of Amano-Iwato of Amaterasu-Ohmikami (the god of the sun). This story has been handed down by Yokagura (sacred music and dance) as performed by farmers. (M 22250) Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg

February 22, 1824 Birth of Pierre Jules Cesar Janssen (1824-1907, France), French astronomer and physic. Studied the Sun. Co-discoverer of the lines of Helium in the Sun, that time on Earth not yet discovered. Observed solar eclipses of which one from Algeria when he escaped Paris with a balloon during the war. (ref Rc 1999)

February 22, 1960 Death of Samuel A. Mitchell, American astronomer of the University of Virginia. Observed numerous solar eclipses. Born in 1874.

(Continued on page 6)

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February 23, 1938 Minor planet 1722 Goffin 1938 EG. Minor Planet discovered 1938 February 23 by E. Delporte at Ukkel, Belgium. Named in honor of the Belgian amateur astronomer Edwin Goffin, who has made extensive computations involving minor planet orbits. Goffin chased quite a few eclipses as well.

February 24, 0453 "Even the Sun appeared hideous, so that scarcely a third part of it gave light, I believe on account of such deeds of wickedness and the shedding of innocent blood." Gregorius Turonensis Refers to solar eclipse of 24 February AD 453, when Attila the Hun was raiding Italy. Ref FE 01/01

February 24, 1938 Minor planet 1552 Bessel 1938 DE. Minor Planet discovered 1938, February 24 by Y. Vaïsälä at Turku. Named in honor of the eminent German astronomer Friedrich Wilhelm Bessel (1784-1846). (Ref. Sc 1999)

February 24, 1996 Launch of Polar, American satellite. Studied Solarwind in polar orbit around the Earth.

February 25, 1598 "There is a tradition that some persons in the north lost their way in the time of this eclipse, and perished in the snow." Refers to the total solar eclipse of 25 February 1598. From: Maclaurin, Philosophical Transactions, vol xi, p193, 1737. Quoted in UK Solar Eclipses from Year 1 by Williams.

February 26, 1786 Birth of Dominique Francois Jean Arago (1786-1853), French astronomer. Studied solar eclipse of 8 July 1842 and noted it exists of gas. (Ref. Rc 1999)

February 26, 1878 Death of Angelo Secchi (1818-1878), Italian astronomer. Photographed solar eclipse of 18 July 1860. Studied the sun and sunspots. (Ref. Rc 1999)

February 26, 1979 Total Solar Eclipse in Pacific Northwest. Passes through parts of Washington, Oregon, Montana and Manitoba. Observed total by G. Vandenbulcke (Gerard Deman?). Picture Bryan Brewer/Eclipse 1991 p. 37. See graph brightness from jet in Total Eclipse's of the Sun/J. Zirker 1995 p. 71+72 and p. 121+125 on F corona and interplanetary dust.

February 27, 1897 Birth of Bernard Ferdinand Lyot in Paris, French astronomer. Studied polarization of moonlight en planets. Later mainly Solar research. Constructed chronograph and the 'lyot-filter' or monochromatic polarizing filter.

February 27, 1906 Death of Samuel Pierpont Langley (1834-1906), American astronomer. Founded SAO (observatory), measured the solar constant, studied aerodynamics. The Royal Society does also mention 22 February 1906. (Ref. Rc 1999)

February 29, -0356 (357 BC) Last total solar eclipse on February 29. This 5 minutes total solar eclipse started off in the Atlantic (near the NE coast of South America), through Africa and ending in Asia. Partial solar eclipse on February 29, 128. It takes only 76 years before we have a next solar eclipse on this date, namely in 184. This is again a partial solar eclipse. This eclipse of 128 was visible in South America and Africa. February 29, 0184 Partial solar eclipse on February 29. The eclipse of 184 was visible in Europe, Eurasia and North Africa. February 29, 648 Annular eclipse on February 29 in the Antarctic and the coast of Australia. This is 464 years after previous eclipse on February 29 in 184. February 29, 1188 Last solar eclipse on February 29. Between 0 and 3000, there are 6 solar eclipses on February 29. This eclipse was an annular eclipse, visible in Australia, Papua New Guinea and Hawaii. It will be 1228 before there is another solar eclipse on February 29, namely in 2416.
February 29, 2416 Next solar eclipse on February 29. February 29, 2872 Last solar eclipse on February 29, before 3000. This partial solar eclipse will be visible in Alaska and Siberia.

February 29, 1908 Dutch scientists produces for the first time helium. Ref. DD 3/99.

and ... keep those solar eclipse related messages coming …

Maya Peebler

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SECalendar for February - 02.02.02 Wedding

From : Alan Leighton <leighton@gmx.net> To : SOLARECLIPSES@AULA.COM Date : Tue, 29 Jan 2002 11:21:31 +0100

Dear Patrick and Joanne May you have many happy years of eclipse-chasing, -researching, and -publicis ing together!! Congratulations, and all the very best wishes!!

And now, with a little help from my colleagues at the Bochum Sy mphony Orchestra, a little bit of Mendelssohn :

Ta-Ta-Ta-Taaa (Ta-Ta-Ta-Taaa) Ta-Ta-Ta-Taaa (Ta-Ta-Ta-Taaa) Ta-Ta-Ta-TAAAA Taaa Ta-Taa Taa Taa Taa Taa Tattle-attle-a Ta Ta-Taa ..... Alan Leighton, Bochum, Germany

From : "Govert Schilling" <mail@govertschilling.nl>

Congratulations, Patrick and Joanne! For all eclipse-chasers over the world, I would like to add that 02/02/02 is the date of the 'royal wedding' in the Netherlands: crown prince Willem-Alexander, son of Queen Beatrix, will marry Maxima Zorrequieta on that day. I don't need to explain the relationship between crown and corona here... --Govert http://www.govertschilling.nl

From : Jay.M.Pasachoff@williams.edu

I know that all of us interested in eclipses wish Joanne Edmonds and Patrick Poitevin all the best on the occasion of their marriage, scheduled for February 2, 2002. Jay Pasachoff

Standsted House in Rowlands Castle, Hampshire, the wedding venue for Jo and PP

From : Michel-André LEVY <malevy@sinopia.fr>

Congratulations to Joanne and Patrick My wedding was on the 5th of december 1992. And this is not "off topic" : to celebrate our 10th wedding anniversary, I told my wife that I would organise a Total Solar Eclipse in Africa and Australia. She was very touched by such an attention. Michel-Andre LEVY

From : "Katherine Low" <klow@skynet.be>

And also non 'off topic': both eclipse chasers Kris Delcourte and Katherine Low married on 23-April-1988, 1 month after having experienced their first total solar eclipse together at the roof top of the city hall of General Santos City (Philippine) on 18-Mar-1988.

From : "B.A.Tafreshi" <btafreshi@nojum.net>

Congratulations to Joanne and Patrick. Wish you have Clear Skies in your life. It seems that it's eclipse chasers year to marry. I will marry to my partner observer and colleague at our Nojum magazine office this March on 21 (Vernal equinox and New year celebration in Iran). We will have our ceremony with some of our Amateur astronomer friends in a remote and magneficent forest area in northern Iran at the time of our new year.Another Member of SEML , Mike Simmons with his Wife Sherri will Join us for the ceremony. Kindest Regards Babak A.Tafreshi Editor at Nojum (Iranian Magazine of Astronomy) www.nojum.net

From : "Carton, WHC" <Wil.Carton@corusgroup.com>

Patrick and Joanne, my firm congratulations and I hope for you an unforgettable wedding day 2-02-2002 and a happy future. I met Patrick as co-member of the Flamish-Dutch eclipse expedition to Malindi, Kenya, in february 1980, and remember vividly his excitement after that event. Wil Carton.

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February calendar - Barrabas

From : Bob Morris <morris@sce.carleton.ca> To : Patrick Poitevin <patrick_poitevin@hotmail.com> Date : Tue, 29 Jan 2002 07:11:39 -0500 (EST)

Patrick: Congrats to you and Joanne. You've forgotten that the Feb 61 eclipse in Italy was the first and to this date "most important" eclipse to appear in a major film, Barrabas. It played a role in the film, and was really filmed in a one-time effort. This has been documented in Astronomy mag as well as in the article I wrote. Barrabas will shortly appear as a DVD. Bob Morris

SECalendar - 25 January 1925 eclipse

From : Skywayinc@aol.com To : eclipse@hydra.carleton.ca Date : Sun, 30 Dec 2001 13:05:53 EST

<< January 24,1925 Capt. F. B. Littell took the company of 19 crew and scientists to an altitude of 4500 feet with a Zeppelin. Of the scientists, there were E. T. Pollock, G. H. Peters, H. H. Barnes, J. A. Jennings, and C. B. Watts, of watts limb charts fame. It was a normal eclipse expedition but on a platform unique among them all. (ref. S and L E observations 1943-1993, F. Graham) >>

This nearly turned out to be tragedy in American aviation. The airship in question was the Los Angeles, which at that time was the largest in the world. Lifting off from Lakehurst, New Jersey en route to a pre-selected eclipse viewing site near Nantucket Island, the Los Angeles was suddenly hit by a fierce northwesterly wind gust that actually caused the airship to nearly topple over on its side. Fortunately, the Los Angeles was quickly righted upwards and was able to fly off on its flight to totality. -- joe rao

From : Skywayinc@aol.com

<< January 24, 1925 Famous New York Eclipse. Southern limit passed somewhere through Manhattan: exact line between 95 and 97th Streets. Observers stationed at every intersection between 72nd and 135th Streets. Path New York and Connecticut clear skies. Millions of people witnessed the Eclipse. This was also the eclipse that gave rise to the now popular term "Diamond Ring Effect." Since the southern edge of totality crossed upper Manhattan, those who were located just outside the eclipse track saw a single bright bead of sunlight persist through the maximum phase of the eclipse, while the inner corona was also visible. In the January 26th, 1925 edition of The New York Times, under the headline "Scientists Missed Sun's 'Diamond Ring' " we read in part:

" . . . spontaneously called 'the diamond ring' by numbers of observers in New York, and this term, hitherto unknown to astronomy, was apparently fixed forever as a techical term in the literature of the subject by Saturday night." -- joe rao

From : Skywayinc@aol.com

<< January 24, 1925 Mabel L. Todd also was passionately interested in total solar eclipses, and traveled to a dozen of them at a time when expeditions often lasted for many months. He photographed the New England total eclipse of January 24, 1925 from an airplane, and some sources credit him with being the first astronomer to photograph the sun's corona from an airplane. Richard Sanderson 6/97 >>

There were actually more than two dozen aircraft that were in the skies over the Greater New York area during this eclipse and many carried photographers. One of those was astronomer Willem J. Luyten who served as a reporter/photographer for the New York Times and witnessed the eclipse at an altitude of 10,000 feet over the Long Island Sound shoreline of Connecticut. Luyten later noted that one of the difficulties that he had in photographing the totally eclipsed Sun was not being able to see what the frame number in his camera was registering. "I could only snap the shutter, advance the film and hope that my next pot-shot would not end up on the previous frame." -- joe rao

SECalendar

SECalendar - Carret

From : Michael Gill <eclipsechaser@yahoo.com> To : Patrick Poitevin <Patrick_Poitevin@Hotmail.Com> Date : Sun, 30 Dec 2001 10:10:31 -0800 (PST)

> January 31, 1981 Minor planet (7324) Carret 1981 BC. Discovered 1981 January 31 at the Harvard College Observatory at Harvard. Named in honor of Philip L. Carret (1896-), on the occasion of his 101st birthday and the 80th anniversary of his graduation from Harvard University. Passionately .../...

Hi Patrick - sadly, Mr Carrett passed away in 1998. I saw him on the cruiseship 'Veendam' at the February 1998 TSE wearing his 'I-saw-Halley's-Comet-Twice' t-shirt! Not bad going to be eclipse-chasing at age 101! Clear skies, Michael.

SECalendar—Dates

From : "Brian Garrett" <mgy1912@home.com> To : <SOLARECLIPSES@AULA.COM> Date : Sun, 30 Dec 2001 23:51:28 -0800

> January 01, 1386 New Years total solar eclipse in Europe. January 01, 1443 Partial solar eclipse on New Years day. January 01, 1489 Annular eclipse on New Years day. For Papua New Guinea was this eclipse visible on January 2. Question: Did it occur on January 1st or, due to the 10 day cut of Gregory in 1582, rather on December 21, or January 11? (Nicolas Gessner

I would think that the correct date of the eclipse would be the one used in the entry, i.e. 1489-01-01. It seems to be the practice to use Julian, rather than proleptic Gregorian, for dates prior to 1582. Thus (to use a sample date from the same period), Columbus' landing on San Salvador Island is 1492-10-12, whereas use of the proleptic Gregorian calendar would make it 1492-10-22. Brian Garrett

From : Gessner <gessner@easynet.fr> To : <eclipse@hydra.carleton.ca> Date : Mon, 31 Dec 2001 16:13:39 +0100

> January 01, 1386 New Years total solar eclipse in Europe. January 01, 1443 Partial solar eclipse on New Years day. January 01, 1489 Annular eclipse on New Years day... Question: Did it occur on January 1st or, due to the 10 day cut of Gregory in 1582, rather on December 21, or January 11? (Nicolas Gessner 12/00).

One year later I confess to the naivete of my question. The obvious answer is: yes, January 1st is OK. Those ancient chroniclers saw and recorded the eclipse on January 1st. And if we track back with our computerized planetaria it's OK again: they go directly from October 4, 1582, to October 15, skipping those 10 days Pope Gregory instructed everybody to skip. Nicolas Gessner

SEDates

Forthcoming meetings of the Society for Popular Astronomy Meetings

Saturday, 26 January 2002. The Cockburn Theatre, St Mary's Hospital, Paddington. Dr John Zarnecki details the Cassini-Huygens mission to Saturn and Titan. The African eclipse by Conrad Malin-Smith, with an eclipse video by Shelagh Godwin and a presentation by Calvin Stevens. Jerry Workman reviews eclipses.

See: http://www.popastro.com/meetings.htm

Un moment d'obscurite au Palais de la Decouverte

From : christian viladrich <viladric@club-internet.fr> To : SE Mailing List <SOLARECLIPSES@AULA.COM> Date : Mon, 21 Jan 2002 19:48:02 +0000

Dear all, For those of us near France on saturday 26 january : A projection of the film relating the Astrophysical of Paris/ IAS/Paris Observatory expedition to Angola to observe the 21 june eclipse will be made in Paris at 15:00 (address below).

This film won a special prize at the Internationnal Journalism Festival of Angers.

The projection will be followed be the presentation the first results of the mission by Serge Koutchmy (IAP/CNRS). Best regards Christian Viladrich http://perso.club-internet.fr/viladric/

From : "76630,2206" <76630.2206@compuserve.com>

And for those of us who are not going to be anywhere near France, how would we be able to view the film and Serge Koutchmy's discussion? regards, Robert B Slobins

Serge Koutchmy (right) in discussion with Erwin Verwichte at SEC2000 in Antwerp (Picture Ed Krupp)

SETalk

Penumbral lunar eclipse of 30 December success

From : Starguy@aol.com Reply-To : SOLARECLIPSES@AULA.COM Date : Sun, 30 Dec 2001 14:05:58 EST

Happy New Year to you all in advance

I am reviewing the Ofoto photo services and posted some of my astronomy pics to see how they would come out.

The latest posted are the pictures of the penumbra eclipse of Dec 30, 2001. I was caught a little by surprise at the differences that the penumbra (light shadow) caused from picture one to picture 3 (taken at 4:30, 5 & 5:30 EST-> mid penumbra eclipse). Exposure was 0.5 seconds.

taken with the Harvard-Smithsonian Center for Astrophysics in Cambridge, MA. FGU microobservatory project scopes that I work with at Longitude is 71.13. Latitude is 42.38.

Instructions to view pics are below and a link

Although the pics were a little off line, it does show the penumbral darkening. Also, I took pics with my digital camera 290 but not much as I can see.

I was rather suprised with the difference of the darkening. I did not wait around in the cold to see the differences however and let the scope do the work and observations.

Does anyone know the difference in the darkening % or ? comparing the umbra and penumbra. That would be an interesting fact indeed.

I am making an animated gif of those 3 pictures. If you might want a copy of the animated gif I can send it via attached. Just send me a private email - don't post on the eclipse listserve.

Once again thanks for a great year of eclipse and astronomical conversations and learning about eclipses, history and much more on this listserve. On to 2002.

Picture Olivier Staiger

Eclipse Comet Posidonius

From : "J.P. van de Giessen" <janpieter@giessen.f2s.com> To : "Patrick Poitevin" <patrick_poitevin@hotmail.com> Subject : Eclipse Komeet van Posidonius Date : Sun, 11 Nov 2001 15:08:44 +0100

Patrick, Op je site http://www.mreclipse.com/SENL/SEComets/m4620430.htm kwam ik een foutje tegen: "Posidonius saw a comet during the eclipse of 30 April -462." Dit is onmogelijk daar Posidonius leefde van 135 v. C. (geboren te Apameia, Syrie) tot en met 51 v.C. (Rhodes).

Ter verduidelijking citeer ik Donald K. Yeomans (in het engels): Seneca mentioned that Posidonius once observed a comet during a solar eclipse and concluded that many comets may be hidden by the Sun's rays. If Posidonius personally observed a comet during a solar eclipse, it might have been during the total eclipse of either 115 or 103 B.C. or perhaps during the partial eclipse of 94 B.C. Ech of these events was observable in the Mediterranean area. (Donald K. Yeomans; "Comets, A Chronological History of Observation, Science, Myth, and Folklore", J. Wiley & Sons Inc., New York, p. 9, 17).

Overigens zijn er geen andere gegevens over de waarnemingen van een of meerdere kometen in de genoemde jaren, laat staan in combinatie met een verduistering. Voor een korte biografie van Posidonius: http://www-groups.dcs.st-andrews.ac.uk/~history/Mathematicians/Posidonius.html

Mocht dit voor de SEML interessant zijn dan natuurlijk doorsturen. Groeten, Jan Pieter van de Giessen

From : "Patrick Poitevin" <patrick_poitevin@hotmail.com>

Best Jan Pieter, Inderdaad was het een referentie die ik als geen echte eclips komeet beschouwde:

Following are NOT considered as Eclipse Comets

Eclipse of 30 April -462

Dank voor de extra informatie. Moest je nog meer hebben, laat het me dan weten aub.

Posidonius of Rhodes

Born: 135 BC in Apameia, Syria
Died: 51 BC in Rhodes

(Continued on page 12)

SETalk

Posidonius of Rhodes is also known as Posidonius of Apameia. The first of these names refers to where he taught while the second refers to the town of his birth, Apameia on the Orontes. One must not think of these two as different people. Although he was born in Apameia in Syria, Posidonius was from a Greek family and he was brought up in the Greek tradition. He went to Athens to complete his education, and there he studied under the Stoic philosopher Panaetius of Rhodes. Posidonius travelled widely in the western Mediterranean region and he made many scientific studies on his travels relating to astronomy, geography and geology.

Some time not long after 100 BC Posidonius became the head of the Stoic School in Rhodes. While in this position he also held political office in Rhodes. It was in a political position, as ambassador of Rhodes, that he travelled to Rome in 87-86 BC. There he met a number of men who he had known and taught earlier including Cicero.

In Rome Posidonius visited Gaius Marius, the Roman general and politician who was consul seven times. Marius died on 13 January 86 BC while Posidonius was still in Rome. While there Posidonius became friends with Pompey the Great who had been educated in the Greek tradition. Pompey the Great kept up his friendship with Posidonius and visited him in Rhodes on a number of later occasions when on his military campaigns.

None of the writing of Posidonius has survived but much has been written about his achievements and much work has been undertaken trying to reconstruct his views from the fragments of his writings which are preserved in quotations by later authors.

Posidonius made some minor contributions to pure mathematics where he is [2]:- ... quoted as the author of certain definitions, or for views on technical terms. e.g. 'theorem' and 'problem', and subjects belonging to elementary geometry. ... he wrote a separate work in refutation of the Epicurean Zeno of Sidon, who had objected to the very beginnings of the "Elements" on the ground that they contained unproved assumptions.

His work on astronomy is fairly well known to us through the treatise by Cleomedes On the Circular Motions of the Celestial Bodies. The work is in two volumes and as Heath comments [2]:- ... the very long first chapter of Book II (nearly half of the Book) ... seems for the most part to be copied bodily from Posidonius. Cleomedes explains in his work the method used by Posidonius to calculate the length of the circumference of the earth. His method is based on observations of the star Canopus at Rhodes and Alexandria. At Rhodes he observes that Canopus touches the horizon while at Alexandria it reaches an altitude of 7 30'. Using a distance of 5000 stadia between Rhodes and Alexandria this gave Posidonius a value of 240000 stadia for the circumference of the earth. This a very accurate value, but it is produced because of two compensating errors. Both figures used by Posidonius in the above calculation are inaccurate. The 7 30' should be really 5 15' while the figure of 5000 stadia for the Rhodes to Alexandria distance is also incorrect. Later Ptolemy informs us via the writings of Cleomedes, Posidonius used the more accurate 3750 stadia for the Rhodes to Alexandria distance but kept his very inaccurate 7 30' thus obtaining the figure of 180000 stadia for the circumference which is far too small. We should note, however, that Taisbak in [11] attempts to prove that attributing this far too small value of 180000 stadia to Posidonius is unfounded. Eratosthenes had given a much more accurate value of 252000 stadia 150 years before Posidonius.

Posidonius also made calculations of the size and distance to the moon, and the size and distance to the sun. His measurements of the moon are inaccurate partly because he assumes a cylindrical rather than conical shadow. As to his calculations of the sun, Neugebauer writes [3]:-

Posidonius's attempts (according to Cleomedes) to determine the size of the sun are rather naive and make it difficult to understand that his astronomy was not ridiculed by authors like Cicero and Pliny who pretend to know the work of Hipparchus. As to Posidonius's views on knowledge he believed that [1]:- ... fundamental principles depended on philosophers and individual problems on scientists; and he believed that, among early men, the philosophically wise managed everything and discovered all crafts and industry. ... For true judgement the standard is right reasoning; but precepts, persuasion, consolation, and exhortation are necessary; and enquiry into causes as opposed to matter is important. Posidonius wrote on meteorology, a topic where he closely followed the teachings of Aristotle. He gave theories to explain clouds, mist, wind and rain. He also gave opinions on frost, hail and rainbows. Lightning and earthquakes interested him and he tried to approach all these topics in a scientific manner althouh he had little chance of coming up with explanations which were anywhere close to being correct. In moral philosophy he followed the Stoic teachings and gave opinions on virtue, evil, the soul, and emotions. He wrote historical works covering the period from about 146 BC to about 63 BC. These works give an account of the Roman civil wars and the contacts by the Greeks and the Romans with other peoples such as the Celts, Germans, and peoples of Spain and Gaul.

Article by: J J O'Connor and E F Robertson

SETalk

YOHKOH LOSES CONTROL

From : "John Wagoner" <stargate@astromax.com>

SKY & TELESCOPE'S NEWS BULLETIN - JANUARY 4, 2002

YOHKOH LOSES CONTROL

On December 14, 2001, the Japanese solar observatory Yohkoh began spinning out of control. Since then, all scientific operations have stopped, and it remains unclear when the craft will be operational again.

The problem began during last month's annular eclipse of the Sun. Yohkoh uses a Sun-centering system to determine its position at any given time. During the eclipse, the craft lost contact with the Sun, put itself into a "safe mode," and slowly began to drift off track and rotate. Normally this wouldn't have been a problem -- during its decade in orbit, Yohkoh has seen its share of eclipses. However, this event occurred during a rare period of the craft's orbit (known as an invisible orbit) when the craft was out of communication with Earth. Thus controllers on the ground couldn't detect (or compensate for) the craft's sudden roll.

Problems only got worse from there. Because of its slow roll, Yohkoh's solar panels no longer received direct sunlight. By the time ground controllers at the Kagoshima Space Center regained contact with the observatory, its batteries were very low and the craft had lost attitude control.

To fix the problem, scientists first established contact and turned off all the craft's science instruments in order to conserve power. Currently the craft is rotating slowly, about one rotation per minute. According to Loren Acton (Montana State University), head scientist of Yohkoh's solar X-ray telescope, in the spacecraft's current state, its solar panels only receive sunlight in spurts. "During flashes of illumination, electricity is produced," says Acton. Thus the first step toward recovery is for scientists to wait until the craft can charge up.

It's currently unclear when, and even if, scientists will regain control of the craft. But astronomers are hopeful. "It will take clever work to stop the roll and reacquire the Sun," says Acton.

Solar eclipse May 15, 1836 Bulgaria

From : "J.P. van de Giessen" <janpieter@giessen.fol.nl> To : <SOLARECLIPSES@AULA.COM> Date : Thu, 10 Jan 2002 21:25:17 +0100

I found on the following site http://draco.skyarchive.org/sun99/church.htm a picture of a marble façade above the side door of the Bulgarian church "Uspenie presveta bogoroditza" (Success of Mother of God) in the town of Haskovo. On this picture you can see a partial solar eclipse. The church had been sanctified on 15 of August 1837.

Could this be the partial SE of 15 May 1836? A calculation by Calsky

(http://calsky.astroinfo.org/csrender.cgi?number=0&tdt=2391780.15902&lat=42. 67&lon=26.32) gives the same picture as on the marble façade.

Has anyone more information about this SE in Bulgaria and specific information about the façade on this church?

Jan Pieter van de Giessen

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Solar eclipse April 20, 1523 BCE

From : "J.P. van de Giessen" <janpieter@giessen.fol.nl> To : <SOLARECLIPSES@AULA.COM> Date : Sat, 5 Jan 2002 14:39:48 +0100

Hey all, I found the following interesting message in the newsgroup: sci.astro.research, date: 2001-12-15

>This "continues" my previous posting. The 567 neglected Mesopotamian clay tablets. Omen tablets, and due to this generally not accepted as dealing with real phenomena. But I believe there is information in these heavily damaged texts.
>
>This time I will discuss tablet number 104. The astronomical "statement" which is interesting is the following: "On the 28th day, at 2 1/2 'double hours' of the day ... it made an eclipse". "If an eclipse of the sun takes place in Nisan". "It there is an eclipse in Nisan on the 28th day". The possibilities are very limited since both the month and the time of the day are given. My interpretation is that we are dealing with the total eclipse on April 20, in 1523 BCE (Julian calendar, year zero excluded). Does this interpretation agree with what the eclipse predicted? Well, that is a minor problem. This is a poorly known period in Mesopotamian history, so there is plenty of room for improved knowledge. But I have noticed what possibly is a problem. If we look at what we believe happened in the years around 1520 BCE, then we find the following. It appears probable that the last ruler of the Babylonian Sealand dynasty defeated Elam before his dynasty was put to an end by the Kassites. If we instead look at the omen tablet, these two events appear to come in the reverse order. I understand that this is the wrong place to discuss details in Mesopotamian history, but a common problem with interpreting ancient material, in order to find references to observed astronomical phenomena, is that one often runs into problems with what is thought believable taking into account other material.
>

>As usual, all follow-up postings are extremely welcome. Thank you very much in advance. Yours sincerely G H I Johansson

If he is right, I suppose this is the oldiest solar eclipse ever determined, has anyone more information about this SE? Jan Pieter van de Giessen

A new look at the remarkable 3 October 1986

From : "Glenn Schneider @ Home" <gschneider@mac.com>

To : SOLARECLIPSES@AULA.COM Date : Sat, 22 Dec 2001 00:53:51 -0700

All, This week, after 15 years, I *FINALLY* scanned the original negatives from the 400mm EFL camera I used on the 03 October 1986 "diamond tiara" eclipse. Though the actual duration, and indeed, even definition of that event may remain somewhat conjectural (if not controversial), I've put a photo mosaic of the three frame-per-second sequence (and rendering into a QuickTime movie) on my web server.

Please see: http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_86/E1986_MOSAIC.html

or look for the obvious NEW links (after the intro material) on:

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_86/ECLIPSE_86.html

For those (like me) who are heading to Australia next year and lamenting (unlike me) over "only" getting appx. half a minute of totality take heart. As the 3 October 1986 eclipse demonstrates duration is but one aspect of an eclipse, the phenomenology of its other aspects can more than "make up" for the brevity of a short eclipse. Consider this:

I have ALWAYS wanted to experience a sunset total solar eclipse, but was never before willing to offer up a sacrificial totality. The 2002 Austrailian eclipse, however, is the PERFECT opportunity, and I plan to head inland to the dry skies of interior for that event. Virtually no time (duration) is lost over a coastal observation (where the sun is only 8 degrees up), and the likelihood of clear skies is even greater. Yes, looking through an even greater

column of air with the Sun just above the horizon is riskier, but I won't forgo the contingency of a coastal return if

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necessary. Importantly, the advent of the June 2002 annular provides a great opportunity to witness two "back-to-back" central eclipses at sunset, as the preceding annular ends at sunset just inland from the Mexican coast. A wonderful comparative opportunity. If anyone else here is so inclined drop me an email. Cheers, Glenn Schneider.

From : Evan Zucker <ez@AbacusTotality.com>

At 11:53 PM 12/21/2001, Glenn wrote: All, This week, after 15 years, I *FINALLY* scanned the original negatives from the 400mm EFL camera I used on the 03 October 1986 "diamond tiara" eclipse.

Beautiful! Thanks for posting them. Unfortunately, I wasn't able to get your MOV file to work, either in Internet Explorer 5.5 or Netscape 4.7.

On your web page you say: "Clearly, this eclipse was not annular. Some have argued it was not total as the photosphere was never instantaneously completely extincted. However, we were immersed in the lunar umbra as we could very clearly see the moon's shadow projected on the cloud tops below us."

How do you know that it was the umbra you saw projected and not the innermost penumbra? I suspect you are correct that it was the umbra, but is it possible it could have been the penumbra? I'm guessing you'll say it must have been the umbra because you could see the entire elongated cigar shape. Any photos of that?

Did you ever get a translation of the Icelandic newspaper article at http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_86/MORGUNBLADID.gif? If not, I have a former Icelandic girlfriend (from when I was stationed at NAS Keflavik), and I could ask her to translate.

I have ALWAYS wanted to experience a sunset total solar eclipse, but was never before willing to offer up a sacrificial totality.

Me too, although I was always more fascinated by seeing a total solar eclipse at sunrise. The image of the black lunar disc coming up from below the horizon has always fascinated me. If you had a choice, would you prefer the sunrise or sunset? -- EVAN

From : "Glenn Schneider @ Home" <gschneider@mac.com>

Evan Zucker wrote: Beautiful! Thanks for posting them. Unfortunately, I wasn't able to get your MOV file to work, either in Internet Explorer 5.5 or Netscape 4.7.

Sorry. Should load now under Netscape 4.7 (it was set up for download, now it should now come up in your browser). I don't run IE so couldn't test it in that browser. I also put a link to the Apple site for a free download for a QT viewer under MacOS or Windows. Please flush your cache and reload the page.

> How do you know that it was the umbra you saw projected and not the innermost penumbra? I suspect you are correct that it was the umbra, but is it possible it could have been the penumbra? I'm guessing you'll say it must have been the umbra because you could see the entire elongated cigar shape. Any photos of that?

This will forever, I fear, be an "angle dancing on the head of a pin" argument. We tend to think of the "edge" of the umbral shadow a projection of an ellipse (as the cone intersects the surface) onto an oblate spheroid. However, the deviations in the edge profile (limb effects), in this eclipse, were of comparable amplitude (size scale at the earth) to the projected shadow width (along the minor axis). Still, the projection of the shadow we saw on the cloud-tops (28,000 feet below us) was VERY dark with a high contrast edge and VERY elongated (highly elliptical; the predicted eccentricity was 0.993). I have trouble reconciling that with what a "parfocal" umbral shadow projection may have looked like. Unfortunately, I have no photos of the shadow recession - just an image etched in my mind's eye. I was running only two cameras, both trained on the Sun, and BOTH out of film right after the central phase ended.

(Continued on page 16)

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> Did you ever get a translation of the Icelandic newspaper article at http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_86/MORGUNBLADID.gif? If not, I have a former Icelandic girlfriend (from when I was stationed at NAS Keflavik), and I could ask her to translate.

No, I never did. I would LOVE a translation, as to this day I still does not know what it says.

> Me too, although I was always more fascinated by seeing a total solar eclipse at sunrise. The image of the black lunar disc coming up from below the horizon has always fascinated me. If you had a choice, would you prefer the sunrise or sunset?

All things being equal, I would prefer sunrise as well for just the reason you note. However, seeing the sky darken toward sunset, then hopefully seeing the umbral cone lift "up" (in perspective) as it leaves the Earth's surface) for the total, of course, and the sky brightening after sunset should be quite fascinating in its own right. Actually, I was thinking of locating a bit westward, to see the Sun in eclipse about a degree ABOVE the horizon at mid eclipse, rather than right on the horizon. But that is a "detail" to work out over the next few months (and may be weather driven in situ). Glenn Schneider

From : "Crocker, Tony (FSA)" <Tony.Crocker@transamerica.com>

Questions for Glenn, presumably of general interest:

1.) Fred mentioned that 30 May 1984 was still too bright to observe naked eye. I presume that was not the case on 3 October 1986 given your comments about corona being visible? Were you using the eyepatch that time? The pics support Fred's calculation that beads would start to appear on one side before they were extinguished on the opposite side.

2.) Given your extensive experience what would be your preference for 2005: ship, air like 1986 or on land with a 1984-type eclipse? I think the much higher sun angle than 1986 may make for more difficult viewing out airplane windows. By air or sea there should be some positions where a continuous ring chromosphere without beads would be visible.

From : "Glenn Schneider @ Home" <gschneider@mac.com>

> 1.) Fred mentioned that 30 May 1984 was still too bright to observe naked eye. I presume that was not the case on 3 October 1986 given your comments about corona being visible? Were you using the eyepatch that time? The pics support Fred's calculation that beads would start to appear on one side before they were extinguished on the opposite side.

I too saw the 30 May 1984 "broken" annular eclipse (from near Greenville, South Carolina) and concur that it was indeed too bright to view naked eye, as there was at all times a significant arc of photosphere. During the fleeting few seconds, on Oct 03, 1986, when we had a chromospheric ring (punctuated with transient beads) the observations I made were unfiltered, both through my camera viewfinder and for a brief second naked eye. I did this briefly not because I wa concerned about limb brightness, but only because of the brevity of the eclipse itself. The corona was indeed visible. In fact after what one might classically call "third contact", I placed the photospheric arc on the waxing side of the sun outside of the camera's 7-degree field-of-view and observed the corona quite clearly for the next ~ 50 seconds. I probably could have observed the corona this way longer, but John Goodman (also on the aircraft) ws shouting "the shadow! the shadow!" and was pointing out the window and DOWN to the shadow projection on the cloud tops.

I was not using an eye patch for this eclipse. I had not expected to get dark adapted in anticipation of always "Fighting" some bit of photospheric light - enough to easily ruin a dark adapted eye.

> 2.) Given your extensive experience what would be your preference for 2005: ship, air like 1986 or on land with a 1984-type eclipse? I think the much higher sun angle than 1986 may make for more difficult viewing out airplane windows. By air or sea there should be some positions where a continuous ring chromosphere without beads would be visible.

This annular/total (2005) is very different than 1986 in that at maximum eclipse the moon is much larger (angularly, relative to the sun) than in 1986. Indeed, the maximum duration of a TRUE totality will be about 42 seconds. For me this is a

(Continued on page 17)

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no-brianer and an attempt must be made to get to that point. The altitude of the sun/moon then will be 70-degrees so anairborne observation (which could in principle extend totality a bit) is not really practical - so, though I am not particularly fond of shipboard observations - I think that will be the order of the day.

If you have not seen a 1966 or 1986 like chromospheic ring eclipse 2005 offers that opportunity - but not from land as by the time the path reaches the Costa Rica/Panama border photospheric annularity will be in effect. Indeed, a ship could be located at the 09:05 UT intercept for a two second eclipse (or moved east/west to "tune" the eclipse as one desires for bead/chromosphere/limb effects). This could be a short trip out from Panama, rather than a long haul to maximum eclipse.

I don't really see the advantage of an airborne observation for this eclipse (if one elected to see totality down-track where the altitude of the Sun would make aircraft viewing viable) - unless it were to escape from our nemesis - clouds. If one were interested in seeing a "Chromospheric ring" eclipse and wanted to mitigate the possibility of clouds as much as possible air might be the way to go, for if you went by ship to that point on centerline you would not have any leeway to chase away from clouds and experience the same sort of eclipse phenomenon. Hmmm... What a decision! Glenn Schneider

From : Evan Zucker <ez@AbacusTotality.com>

I've been enjoying the discussion comparing the 1984 and 1986 eclipses. Both were a bit frustrating for me in that I wasn't able to observe either.

Normally I would have flown to the Atlanta area in 1984 in a heartbeat -- I spent 3 years not far away in North Carolina for law school from 1976-79 -- but by 1984 I was stationed in the Mojave Desert with the Air Force, and I couldn't get leave because I was training to fly the F-4 Phantom II.

1986 was even more frustrating because I had just spent 13 months flying F-4s in Iceland (until December 1985), and by eclipse time I was back in the Mojave Desert for cross-training for the F-4G Wild Weasel. Not only did I miss the eclipse, but I also missed the Reagan-Gorbachev summit a few months later in Reykjavik, which was just a few miles away from my base at NAS Keflavik.

Anyway, I note that Fred lists 1984 as 0.998 magnitude and 1986 1.000, and I presume that those figures are for sea level. Glenn mentioned that his 1986 flight was about 80 miles "up" the umbra due to the umbra's low angle with the Earth's surface, and so I assume the eclipse had a larger magnitude than 1.000. I was wondering what the effective magnitude of the eclipse was at his altitude.

I would have thought that 80 miles would make a significant change in the magnitude -- and I got that impression from Glenn's recent message -- because I recall the discussion in 1984 that the eclipse would have been total just a few tens of miles above the Earth's surface. However, my math shows that 80 divided by 239,000 (the Moon's average distance) is only 0.00033, which is not a significant change; in 1984, it would have meant a magnitude of 0.99833 instead of 0.98800. If my math is correct, you would have to have been 478 miles above the Earth's surface for the 1984 eclipse to have had a magnitude of 1.000.

Bear in mind that I did great in math until I hit calculus in college. Since these calculations don't involve calculus, I'd like to think I got them right, but by all means somebody please point out if I've made an error in my approach or number crunching.

I hope everybody in those countries that celebrate Christmas has a very happy holiday. For those of us who are not Christian, it's just nice to get the day off from work. And for Christians and non-Christians alike, I recommend NORAD's site for tracking Santa's progress westward around the world, http://www.noradsanta.org. My 4- and 8-year-old sons love it. I especially recommend the clip showing Santa's flight through my home town of New York City. -- EVAN

From : FRED ESPENAK <u32fe@lepvax.gsfc.nasa.gov>

Hi Glenn - Thanks for sharing your 1986 "diamond tiara" eclipse photos with us. I especially enjoyed the quick-time movie.

While watching the "movie", I did notice something quite odd. About half way through the "movie" a number of Baily's beads quickly appear along the southwest (lower right) limb of the Moon, begin to fade, and then suddenly get very bright. This is quite puzzling behavior, so I took a look at your still frames in the mosaic posted at:

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_86/E1986_MOSAIC.html

I can see the same "reverse" pattern in the mosaic. Start with the image in row 3, column 3 (= image 3-3 for short). Note how much brighter the western beads are than in the previous image 3-2. Now move to the right and watch how the southwestern beads get fainter and less complex in images 3-4, 3-5 and 4-1.

(Continued on page 18)

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(Continued from page 17)

Compare this to image 4-2 which suddenly has very bright beads along the southwest limb.

I suspect that images 3-3 through 4-1 are in reverse order. Glenn, could you check your negatives to confirm this?

If you reverse the order of these four frames, then the progression and formation of Baily's beads makes a lot more sense. If my hunch is correct, perhaps Glenn can post a revised Quick-time movie for all of us to enjoy! Happy holidays! Fred Espenak

From : "Joel M. Moskowitz, M.D." <moskowi@attglobal.net>

Hi Glenn, I think Fred may be right. When we scanned the negs, we always started at the lower numbered neg at the end of the strip, starting from the bottom of the negative holder, but applied a sequential number to the file. Should be no problem correcting the sequence. Joel M. Moskowitz, M.D. 7 (total) eclipses and counting

From : "Glenn Schneider @ Home" <gschneider@mac.com>

Fred, Mea Culpa! You are indeed correct regarding the inversion of the image order of frames "3-3" through "4-1". Thanks for your sharp eyes, and I am embarrassed to not have noticed that myself before positing it. I am not quite sure how I managed to get these out of sequence, but I have confirmed your suspicion is indeed correct by examining the original negatives. I will, of course, correct and repost this - but it may be a couple of days before I get to it (as I am enjoying 'family time' during my time off for the University's holiday break). Cheers, and Happy Holidays, Glenn Schneider

From : "Glenn Schneider @ Home" <gschneider@mac.com>

Well, some things cannot wait ;-) The error in the sequence order in both the image mosaic and the QT movie "24" - "27" inverted) of the 03 Oct 1986 tSE on:

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_86/E1986_MOSAIC.html are now fixed.

Thanks again to Fred Espanak for calling this to my attention.

Please RELOAD your browser (and if needed flush your image cache) if you don't see any change. Glenn Schneider

Crucifiction

From : Ari Belenkiy <belenkiy@ALBERT.PH.BIU.AC.IL> To : HASTRO-L@WVNVM.WVNET.EDU Date : Wed, 19 Dec 2001 10:49:56 +0200

Shalom Joan, it looks like that you are trying to make him die at classical 33. Why not at 49? Ari Belenkiy

From : William Black <balkh@HOTMAIL.COM>

Shouldn't you take a rest, man? Haven't you been working too hard?

>From: Larry Ely Reply-To: History of Astronomy Discussion Group To: HASTRO-L@WVNVM.WVNET.EDU Subject: Jesus: birth and crucifixion Date: Tue, 18 Dec 2001 11:12:18 -0500
>
>Yes, the Moon turning blood red is a reference to Joel, and perhaps other authors of the Bible. At the crucifixion it was reported that there was darkness. This was not from a solar eclipse, but from a sand storm. At the crucifion the ecliptic longitude of the Moon was 190:27 and the Sun was 11:31. As this was at 3:00 pm, at about 5:00 pm, towards sundown, the eclipse of the Moon occurred.
>
>Waddington and Humphreys that Ormond Edwards (The Time of Christ) cites are scholars at Oxford. They surely could pass muster at Nature. Fotheringham, who earlier pointed to the year 33 AD for the crucifixion was a leading light in astronomical circles. Academic inertia has persisted in sitting on the date for the birth of Jesus as 4 BC, thus giving the wrong date for the crucifixion when the roughly 30 + 3 years are added. So the wrong eclipse had been identified. The 33 AD eclipse was near total.
>
>If anyone is too time constricted to get to the Nature volumes, I would be willing to mail them a photocopy of my photocopy for a US $1.00 to handle postage.
>
>Besides giving the birth and crucifixion dates of Jesus, Edwards gives a full chronology of his life. He says that Herod died soon after an eclipse in January, 1 BC, which is before the birth of the December 25, 1 BC Jesus. But according to Steiner there were two Jesus children born that year, the earlier one on January 6, 1 BC. These two dates are exactly 12 synodic cycles of the Moon, Sun apart, the number 12 being significant, and the 12 days of Christmas may be seen to be an allusion to this. The Jesus born January 6, 1 BC is the one visited by the Kings (astrologers), as this Jesus was a highly developed individual (in soul) who had earlier been Solomon, according to Steiner. It is he

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who Matthew reports fleeing to Egypt. But in Luke there is the story of the shepherds visiting Jesus. This Jesus had his first birth on earth at this time, and was totally pure of heart (had done no injury to another human being, so was free of sin, karma). Christian theologians always skip over the contridictory biographies of Jesus between the Matthew and the Luke Gospel. Here is another instance where Steiner turns on the light for us: in his mind's eye he purported to be able to read or revisit history and report on what happened. The two Jesuses were present together in the Temple at age 12, and at that time the ego, that component of the human being that reincarnates and learns from experience, passed over to dwell in the bodily sheaths of the Luke (carpenter) Jesus. This created an amalgam human being who was strong enough to hold the Christ being, the being from the Sun, at the Incarnation. The body of the Matthew Jesus then died off, as it had no regulating ego anymore. Edwards gives all the dates that he thinks are accurate and justifies his reasons, but there may be cases where, for example Jesus was said to be 12, but it could have been his 12th year, so the date can be off one year. Same for the age 30. I have been working on the problem of the correct time of day for each of these Jesuses by comparing these charts to theologicians, priests, pastors, etc. In this way, and through other ways astrological, I have arrived at what I think are the correct times of the day for each. Larry Ely

Sacre Caeur in Paris (Picture by PP)

F. Richard Stephenson et al.: The Inter-Union Commission for History of Astronomy

From : "Wolfgang R. Dick" <wdi@potsdam.ifag.de>

ELECTRONIC NEWSLETTER FOR THE HISTORY OF ASTRONOMY Published by the Working Group for the History of Astronomy in the Astronomische Gesellschaft Number 49, December 19, 2001 Edited by: Wolfgang R. Dick

Item 2 ENHA No. 49, Dec. 19, 2001

The Inter-Union Commission for History of Astronomy

By F. Richard Stephenson, Alexander Gurshtein, Wayne Orchiston, and Stephen J. Dick

We are very pleased to report the recent formation of the Inter-Union Commission for History of Astronomy (ICHA) by the International Astronomical Union (IAU) and the International Union of the History and Philosophy of Science (IUHPS). The ICHA is an international body representing the interests of all professional historians of astronomy worldwide. It encourages research by members, facilitates communication between researchers, organizes scientific meetings, undertakes collaborative projects, and publishes a newsletter. The Union will alsoprepare recommendations for the IAU and the IUHPS, and liaise with other international organisations.

Membership is open to the entire history of astronomy community. Thosewho are IAU members become full members of the Commission, while those who conduct their research through the IUHPS become associate members. New members (of either kind) are elected to the ICHA at the triennial General Assemblies of the IAU (the next one is in Sydney, Australia, in July 2003).

The ICHA is governed by an Organising Committee (OC) of ten. The inaugural OC, which is based upon the current OC of IAU Commission 41, comprises:

President: Prof Richard Stephenson (UK: f.r. stephenson@durham.ac.uk)
Vice-President: Prof Alex Gurshtein (Russia: agurshtein@hotmail.com)
Secretary: Dr Wayne Orchiston (Australia: wo@aaoepp.aao.gov.au)
Members: Dr Steven Dick (USA: steve.dick@usno.navy.mil)
Dr Wolfgang Dick (Germany: wdi@potsdam.ifag.de)

(Continued on page 20)

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Prof Rajesh Kochhar (India: rkochhar2000@yahoo.com)
Dr Tsuko Nakamura (Japan: tsuko@cc.nao.ac.jp)
Prof Il-Seong Nha (Korea: SLIS-NHA@chollian.net)
Prof Woodruff Sullivan (USA: woody@astro.washington.edu)
Prof Brian Warner (South Africa: Warner@physci.uct.ac.za)

A new OC will be elected at the Sydney General Assembly.

Production of ICHA Newsletters is the responsibility of an Editorial Board elected by the ICHA OC. The following inaugural Editorial Board has been formed: Dr Ileana Chinnici (Italy), Professor Alex Gurshtein (Russia), Dr Wayne Orchiston (Australia) and Professor Richard Stephenson. At this stage, our intention is to distribute two newsletters per year, in June and December.

The establishment of a genuine Inter-Union Commission is a major step forward for the history of astronomy community. IAU Commission 41 was founded in 1948, and for decades there was close co-operation between colleagues from this Commission and those associated with the IUHPS. During the 1970s an attempt was made to have C41 formally recognised as a joint Commission of the two Unions, but this initiative was unsuccessful. However, this did not stop colleagues from collaborating on a number of important joint projects, including the Greenwich Tercentenary Symposium in 1979, the General History of Astronomy volumes (1982), and in more recent years (during the 1990s) the international documentation of astronomical archives.

Even though its status was unchanged, in 1994 the idea somehow took hold that C41 had become "A joint IAU-IUHPS Commission" (IAU Transactions XXIIB, p. 207), and this notion was perpetuated through the 1994 ICSU Yearbook (see p. 104). Once this fiction of a "Joint Commission" or "Inter-Union Commission" was established, it was subsequently accepted without question by those associated with the IAU and the IUHPS - including the undersigned!

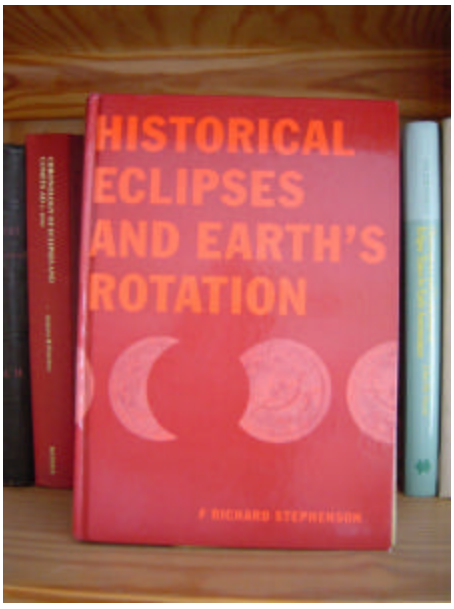
It was only in late 2000 that the true situation was discovered, and the quest for a genuine Inter-Union Commission became a priority of the C41 OC. This proved a daunting task, and one which involved many months of research, consultation and negotiation, never-ending e-mail exchanges, frequent international telephone calls, and even meetings in Paris. However, all this is now behind us, and under the aegis of the ICHA historians of astronomy worldwide can look forward to an era of unprecedented harmonious co-operation and collaboration.

[Source: The ICHA Newsletter, No. 1, June 2001, p. 2-3; slightly abridged.]

Electronic Newsletter for the History of Astronomy (ENHA)

Published by the Working Group for the History of Astronomy in the Astronomische Gesellschaft

Editor: Dr. Wolfgang R. Dick <wdi@potsdam.ifag.de>



Book Historical Eclipses and Earth's Rotation by Richard F. Stephenson (Picture by PP)

SETalk

SENL November and December 2001 NOW ONLINE

From : FRED ESPENAK <u32fe@lepvax.gsfc.nasa.gov> To : SOLARECLIPSES@AULA.COM, eclipse@hydra.carleton.ca Date : Wed, 19 Dec 2001 09:55:49 -0400

Joanne Edmonds has prepared several more issues of the SENL (Solar Eclipse Newsletter) for the months of November and December.

All issues are online in pdf format and can be accessed via the SENL index page of MrEclipse.com:

http://www.mreclipse.com/SENL/SENLinde.htm

Other recent issues currently linked from the above page include:

SENL - July 2001 (Special A) (1.2 MB pdf file*)
SENL - July 2001 (Special B) (0.7 MB pdf file*)
SENL - July 2001 (Special C) (0.7 MB pdf file*)
SENL - August 2001 (Part A) (1.0 MB pdf file*)
SENL - August 2001 (Part B) (0.6 MB pdf file*)
SENL - September 2001 (Part A) (1.0 MB pdf file*)
SENL - September 2001 (Part B) (1.0 MB pdf file*)
SENL - October 2001 (1.0 MB pdf file*)
SENL - November 2001 (Part A) (0.7 MB pdf file*)
SENL - November 2001 (Part A) (0.8 MB pdf file*)
SENL - December 2001 (1.3 MB pdf file*)

Note that all these files are in Adobe pdf format and can only be read with Adobe Acrobat Reader. This software is free and can be downloaded from Adobe's web site (http://www.adobe.com/). Thanks for the hard work Joanne! - Fred Espenak

SENL January Index

Please find herewith the contents of the January 2002 issue of the Solar Eclipse Newsletter. Topic and the page number is listed:

…/…

The SENL will be soon on the WebPages of Fred Espenak. See

SENL: http://sunearth.gsfc.nasa.gov/eclipse/SENL/

Index: http://www.mreclipse.com/SENL/SENLinde.htm

Example: SENL0011.pdf: http://sunearth.gsfc.nasa.gov/eclipse/SENL/SENL0011.pdf

Comments are welcome at patrick_poitevin@hotmail.com Keep those solar eclipse related messages coming… Cheers, Patrick

Index SENL December 2001

From : "Patrick Poitevin" <patrick_poitevin@hotmail.com> To : SOLARECLIPSES@AULA.COM Date : Tue, 18 Dec 2001 20:28:00 +0000

Please find herewith the contents of the December 2001 issue of the Solar Eclipse Newsletter. Beside the topic, the page number is listed:

.../...

The SENL will be soon on the WebPages of Fred Espenak. See

SENL: http://sunearth.gsfc.nasa.gov/eclipse/SENL/

Index: http://www.mreclipse.com/SENL/SENLinde.htm

Example: SENL0011.pdf: http://sunearth.gsfc.nasa.gov/eclipse/SENL/SENL0011.pdf

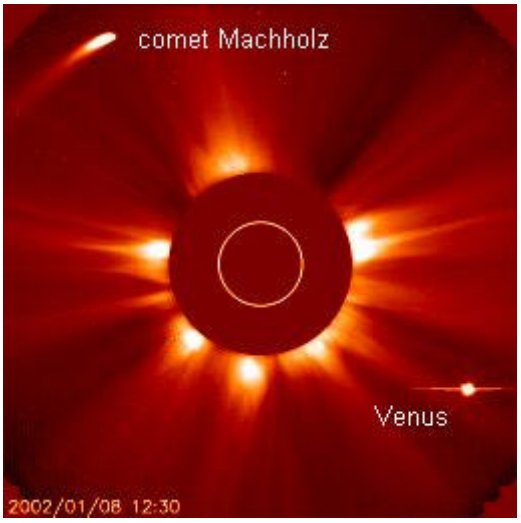
Comments are welcome at patrick_poitevin@hotmail.com Cheers, Patrick

SETalk

If only there was a total eclipse today !!!

From : "Olivier \"Klipsi\" Staiger" <olivier.staiger@span.ch> To : "Patrick Poitevin" <patrick_poitevin@hotmail.com> Date : Tue, 8 Jan 2002 21:22:56 +0100

hi Patrick, did you see www.spaceweather.com and SOHO's LASCO C2 and C3 and EIT 304 images today ? http://sohowww.nascom.nasa.gov/data/realtime-images.html If we had a total eclipse today we would see Venus very close to the Sun, plus comet Machholz, plus a giant CME, plus a huge prominence ! wow !



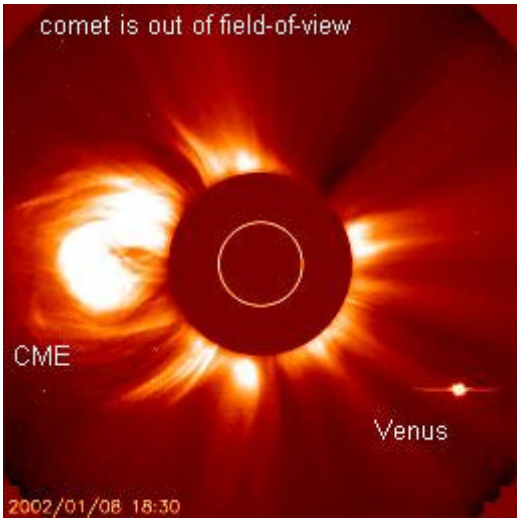
and on http://soho.nascom.nasa.gov/data/realtime-images.html you can choose to click on various sizes below the images, for example 256x256, and then you can find the date and time of the event.

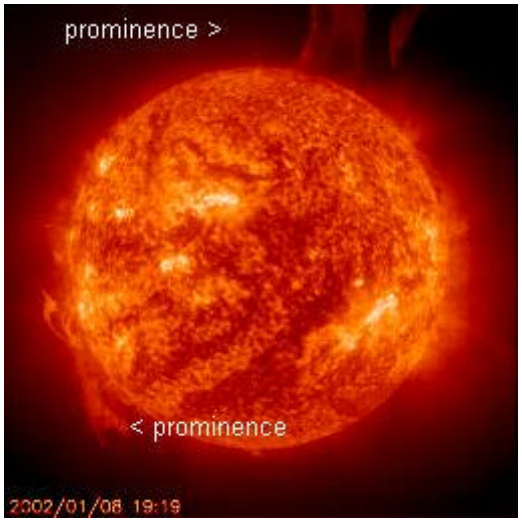
Here attached is a selection. Look at the time at the bottom of each image. Olivier

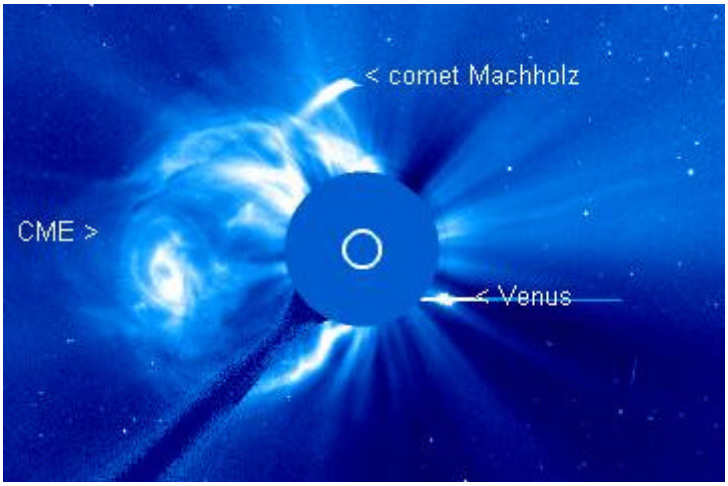
NEWSALERT: Thursday, January 10, 2002 @ 0808 GMT The latest news from Astronomy Now and Spaceflight Now

SOHO'S PRIVATE VIEW OF A SUNBATHING COMET

You could see it easily with your unaided eye if only Comet Machholz 1 were not so very close to the Sun. This unusual comet, reputed to flare up a lot, is today sweltering only 18 million kilometers from the Sun. This is its closest approach on an orbit that brings it back to the solar vicinity every 63 months. The best and perhaps the only view of it at this time comes from the sun-watching spacecraft SOHO. http://spaceflightnow.com/news/n0201/10sohocomet/







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Japanese solar satellite suffers from eclipse!

From : Daniel Fischer <dfischer@astro.uni-bonn.de> To : SOLARECLIPSES@AULA.COM Date : Sat, 29 Dec 2001 17:22:50 +0100

While many of us were fighting with the clouds over Costa Rica, hoping to see the annular eclipse of Dec. 14, the Japanese solar X-ray satellite Yohkoh got into even deeper trouble - check out an ISAS report at http://isass1.solar.isas.ac.jp/sxt_co/011221.html for what happened and how the satellite may be rescued! Daniel

Yohkoh Satellite Status

From : SolarNews Editor <editor@spd.aas.org> Date : Wed, 16 Jan 2002 12:35:50 -0800 (PST)

SolarNews The Electronic Newsletter of the Solar Physics Division American Astronomical Society Volume 2002 Number 1 Stephen R. Walton, editor January 16, 2002

Yohkoh Satellite Status

>From "Hugh S. Hudson" <hudson@isass0.solar.isas.ac.jp> 12 Jan 2002

Yohkoh has not been returning scientific data since the eclipse of December 14, 2001. The situation is explained in a recent science nugget, to be found at

http://solar.physics.montana.edu/nuggets/2001/011221/011221.html

The spacecraft is still functioning and recovery efforts continue. More information should be available after the Yohkoh 10th anniversary meeting January 21-25.

Delta T

From : Jean Meeus <JMeeus@compuserve.com> Date : Mon, 14 Jan 2002 05:12:42 -0500

On 2001 December 1, the value of Delta T was 64.28 seconds.

Delta T is the difference between the uniform Dynamical Time and the Universal Time. That quantity is needed in some astronomical calculations, such as solar eclipses and occultations by the Moon. Jean Meeus

Lunar eclipses that changed the world

From : KCStarguy@aol.com Reply-To : SOLARECLIPSES@AULA.COM Date : Sun, 23 Dec 2001 16:50:01 EST

Greetings Black sun chasers I discovered an article in sky & Telescope Dec 1992 by Bradley E. Schaefer While I did know about the Columbus lunar eclipse scenario and the Siege of Syracuse tie in with eclipses, I did not know about the other 3, the fall of Constantinople, the one related to Lawrence of Arabia and the Gordon rebellion fight in China.

I summarize the accounts below. Also what I liked was the maps of the night sky showing the position of the moon during these eclipses. Dr. Eric Flescher (KCStarguy@aol.com) ***

The ruler Mohammed II launched an attack with his troops in April 1453 against the vestiges of the Roman Emperor and the Roman emperor Constantine and the Byzantines. The attacks against the walls of the city were repaired after each attack and the Turks were not advancing. It was said that Constantipole could never fall while the moon was waxing (going toward full moon) . On May 22 there was a eclipse of the moon and this crushed the morale of the superstitious Byzantians. Mohammed's troops started their final assault 6 days later (why did he not try during the eclipse? Did he do this to let the superstition and doom set in further?) . An open door let some Turkish troops in and Constantinople was sacked in 3 days.

" The fall of Constantinople was one of the great shocks to Western civilization and it colored Europe's development for centuries."

Then the Chinese Gordon Charles Gordon led troops to help the Chinese emperor against the Taiping Rebellion in 1851. He led the chinese mercenaries against the rebels and suffered his only defeat when his soldiers interpreted a lunar eclipse as an evil sign. Preparing a night assault against an armed stockade, Gordon expected the help of the the full moon. What he did not know was that the moon when into a dark partial eclipse just before the attack. This occurred during twilight but the Chinese still saw it as a bad omen and failed with high casualities. The stockade however was later captured.

But Gordon encountered a more grave eclipse.

IN 1884-85 he led a defense of the Sudanese capital of Khartoum against the Mahdi a fanatic leader. A solar eclipse demoralized Gordon's forces and the city fell before

(Continued on page 24)

SETalk

a British relief expedition could arrive. Gordon was one of the casualities.

Then the Turks took on the chin from an eclipse in Lawrence of Arabia Lawrence , then an advisor against the Turks (his picture in the article sure looks like Peter Otoole) was assigned to help an Arab revolt against the Turks. He wanted to lead an assault on the Aqaba, a very important small but famous trading , port on the eastern side ofthe Sinai Peninsula.

At first the troops did not want to try to assault this fortress under full moon. The troops were able to able to conquer the fortifications as they knew of an eclipse that night. The arabs still clanged copper pots and fired rifles to rescue and return the moon.

From : Sinan Kaan Yerli <sinan@sinan.physics.metu.edu.tr>

>The ruler Mohammed II launched an attack with his troops in April 1453 against the vestiges of the Roman Emperor and the Roman emperor .../...

I don't know whether there are other pronunciations or not but the Otoman emperor in English is not "Mohammed II" but "Mehmed II -or- Mehmed Fatih -or- Mehmed the Conqueror".

Besides, Mehmed Fatih spent a year (1452) in building the fortress of Bogazkesen (later Rumeli Hisari) for the control of the Bosporus, in building a fleet of 31 galleys, and in casting new cannons of large calibre... I would think twice about the effect of the lunar eclipse if you could try to imagine the siege of Constantine with the forces in Mehmed's hand (last seige was about two months: April 6-May 29, 1453).

>IN 1884-85 he led a defense of the Sudanese capital of Khartoum against the Mahdi a fanatic leader. A solar eclipse demoralized Gordon's forces and the city fell before a British relief expedition could arrive. Gordon was one of the casualities.
>
>Then the Turks took on the chin from an eclipse in Lawrence of Arabia Lawrence , then an advisor against the Turks (his picture in the article sure looks like Peter Otoole) was assigned to help an Arab revolt against the Turks. He wanted to lead an assault on the Aqaba, a very important small but famous trading , port on the eastern side ofthe Sinai Peninsula.
>
>At first the troops did not want to try to assault this fortress under full moon. The troops were able to able to conquer the fortifications as they knew of an eclipse that night. The arabs still clanged copper pots and fired rifles to rescue and return the moon.

First of all, "mahdi" is a generic name. Part of the history you are refering is probably about Muhammad Ahmad (1844-85) who declared himself in 1881 to be the Mahdi.

Second, in between the years you mention, in the Sudan region, there is no influence of "Turks" or "Ottomans"; Sudan was ruled by the Egyptians in those years. You probably refer to a independence war between Muslims in Sudan vs an Anglo-Egyptian (led by the British) force.

But "if" you use `Turks' as a generic name then this is some sort of an insult to Turkish people (i.e inhabitants of Turkey). To be politically correct one should also make the difference between Ottomans and Turks.

PS: Gordon died in early 1885.

Sorry for being slightly off-topic but above corrections are the facts from accepted history! cheers,

From : KCStarguy@aol.com

For those of you who want further information on the Constantinople eclipse connections, here ere are some links for all of you to read more if you want especially if you can't get your hands on the article I talked about. Merry Christmas and New Year to all and happy eclipse trails to you (a la Roy Rogers)

Dr. Eric Flescher (KCStarguy@aol.com) Member, Astronomical Society of Kansas City (ASKC)- Solar System Ambassador 2002- JPL-(Jet Propulsion Lab) and NASA webmaster Eric's Black Sun Eclipse website - http://www.ericsblacksuneclipse.com

The mystery surrounding the fall of contantinople http://militaryhistory.about.com/library/weekly/aa120300a.htm

Constantinople's Volcanic Twilight written by Lynn Teo Simarski http://www.tughranet.f2s.com/kuwae.htm

militaryhistory.about.com/library/weekly/aa120300a.htm - 39k - Cached - Similar pages

Constantinople in 1453 ... of the city, Constantinople would fall only when the moon ... in May of 1453, the ancient myth ... a long and dark eclipse. Constantinople's Byzantine defenders ... www.tughranet.f2s.com/kuwae.htm - 20k - Cached - Similar pages

(Continued on page 25)

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BBC News | SCI/TECH | Skywatchers wait for eclipse ... Byzantines crushed. In April 1453, the Turks laid ... the old legend that Constantinople would never fall while the Moon ... Moon rose in eclipse and their morale ... news.bbc.co.uk/hi/english/sci/tech/newsid_1106000/1106783.stm - 28k - Cached - Similar pages

www2.jpl.nasa.gov/files/releases/hebrides.txt ... cataclysmic eruption at the fall meeting of the ... of May 22, 1453, the moon, symbol of Constantinople, rose in dark eclipse, fulfilling a prophecy on ... 6k - Cached - Similar pages

Lunar Eclipses of History ... 1453 May 22, Partial, 0.749, 02h59m, Fall of Constantinople. 1504 Mar 01, Total, 1.100, 03h26m [00h49m], Columbus' Eclipse. ... sunearth.gsfc.nasa.gov/eclipse/LEhistory/LEhistory.html - 10k - Cached - Similar pages

ASA: Total Lunar Eclipse ... of a total lunar eclipse, and in 1453 the defenders of Constantinople were so frightened by a partial lunar eclipse that the fall of the city was hastened. ... www.atnf.csiro.au/asa_www/info_sheets/eclipse2000.html - 14k - Cached - Similar pages

.../...

The Fall of Constantinople ... During the spring of 1453 the Sultan moved his army ... full, there was an eclipse and three hours of ... V, nÎ¿. 3542. Runciman, Fall of Constantinople, pp. 65-6 ... www.myriobiblos.gr/texts/english/nicol_fall.html - 81k - Cached - Similar pages

An Early Modern Chronology, 1453-1715 ... 1453, Turks capture Constantinople, end ... following fall of Constantinople. ... Siege of Boulogne Fall of Granada ends ... Jamaica, uses solar eclipse to intimidate natives ... www.columbia.edu/~tdk3/chronology.html - 101k - Cached - Similar pages

Welcome to Khilafah.com ... allowed the Ummah to eclipse all the signs of kufr. In April 1453, the Ottomans laid ... old legend that Constantinople would never fall while the Moon ... www.khilafah.com/1421/category.php?DocumentID=910&TagID=24 - 33k - Cached - Similar pages

Constantinople-Prologue ... Prologue. May 28, 1453, 11.30 pm - Bianca's ... me, below the vertiginous fall of my city's ... I descend quickly. Constantinople will eclipse with the oncoming ... www.ladyrose-unicornpublishing.com/constantinopleprologue.htm - 12k - Cached - Similar pages

hubcap.clemson.edu/~aozkul/1453.txt ... April and May of 1453 were particularly bad in Constantinople. The city's residents faced ... Four days after eclipse, on May 26 ... was about to fall." On May 29 ... 3k - Cached - Similar pages

Time for Blood on the Moon ... of the eclipse. I The total eclipse of the moon .should be visible ... and disheartened the defenders of Constantinople, causing the city to fall In 1453. ... www.wiredweb.com/~shades1997/Time_for_Blood_on_the_Moon.html - 3k - Cached - Similar pages

Physics News Update Number 101 - LUNAR ECLIPSES HAVE SWAYED ... ... and army. In 1453 the Byzantines were steadfastly defending Constantinople against the Ottomans ... city would not fall during a ... of an eclipse which influenced ... www.aip.org/enews/physnews/1992/split/pnu101-4.htm - 5k - Cached - Similar pages 05_29_01

... 1453 May 29, Constantinople fell ... the Byzantine Empire. The fall of the eastern ... of the Siege of Constantinople." (VD-HKp.67 ... May 29, An eclipse occurred that was ... timelines.ws/days/05_29.HTML - 21k - Cached - Similar pages

History Handbook ... 1983. KG Robbins. The Eclipse of a Great Power ... 1016: MEDIEVAL EUROPE, 1250-1453 -Tutor: N. Kingwell. ... Empire culminating in the fall of Constantinople in 1453. ... www.brunel.ac.uk/depts/amshis/history/199.

(Continued on page 26)

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htm - 82k - Cached - Similar pages

Turkey ... of Western philosophy, predicted an eclipse of the sun using the ... in 190 BC until the fall of Constantinople in 1453, the Anatolian life style continued ... www.shelales.com/turkey.htm - 59k - Cached - Similar pages

Dimitri Obolensky. The Relations between Byzantium and Russia ... ... after a period of eclipse which followed the sack ... of the Empire in 1453 the belief that the ... the year before the fall of Constantinople, the grand prince of ... archaeology. kiev.ua/pub/obolensky.htm - 49k - Cached - Similar pages

Shadow of the Moon - eclipse 30 August 1905

From : "Patrick Poitevin" <patrick_poitevin@hotmail.com> To : SOLARECLIPSES@AULA.COM Date : Sun, 13 Jan 2002 15:27:28 +0000

Dear all, I was lucky with the Waverly Auction where the private collection of Lee Price (Knollwood Books) was sold (see SEML and SENL). Of the nine books I purchased, I read in one go "Chasing Eclipses" by Rebecca R. Joslin (Walton Advertising and Printing, 1929). The books describes the observations (or attempts) of the total solar eclipses of 1905, 1914 and 1925.

The observation and the description of the Shadow of the Moon at the total solar eclipse of 30 August 1905 in Spain got my attention. I was wondering when the first observations and description of the Shadow of the Moon happened?

For those interested I'll give you here the passage of the description out of the book. For your information, the observers did had a cloud in front of the sun at the time of totality. The passage at pages 13 and 14:

.../...

Then as the moon moved slowly on, and off, the sun faintly pierced the cloud and lighted the earth and life returned. But we hardly had time to draw a breath, when suddenly we were enveloped by a palpable presence, inky black, and clammy cold, that held us paralyzed and breathless in its grasp, then shook us loose, and leaped off over the city and above the bay, and with ever and ever increasing swiftness and incredible speed swept over the Mediterranean and disappeared in the eastern horizon. Shivering from its icy embrace, the seized with a superstitious terror, we gasped, "What was That?" Had the terrible Horsemen of the Apocalypse been riding over the city, and had we stood in their pathway? Had the Angel of Death held us in his arms for a moment, and then, as our time had not yet come, thrown us off for a little longer stay on earth? The look of consternation on M's face lingered for an instant, and then suddenly changed to one of radiant joy, as the triumphant reply rang out, "That was the Shadow of the Moon!"

.../...

The writer had a cloud in front of the eclipsed sun in 1905, in 1914, on their way for Norway, they had the stay in England due to the commencing was. But they were lucky for the 1925 eclipse in Connecticut. Beautiful writing indeed. PP

Sunrise 210601 by Olivier Staiger

SETalk

Some errors in "Morsels"

From : Jean Meeus <JMeeus@compuserve.com> Date : Thu, 17 Jan 2002 05:22:50 -0500

Mr G.C. Rogers, of Stone (England) found some errors in my "Mathematical Astronomy Morsels". The biggest error in on page 47. Five solar eclipses occur additionally in the years 18, 83, 148, 604, 669, and 734, so the gap between -373 to 1255 does not exist. I cannot understand how I missed those six years. My own computer program does indeed give five solar eclipses for them.

Page 93, column "second eclipse", 1934 August 10 is annular, not total.

Page 99, the eclipse of 1796 January 10 is near the zenith in the *Indian* Ocean.

Page 153, 3rd line below the table, for 2014 October 8, read NH instead of SH.

Four other errors found by Mr. Rogers are less important. Jean Meeus

Minutes and seconds

From : Jean Meeus <JMeeus@compuserve.com> To : "INTERNET:SOLARECLIPSES@AULA.COM" <SOLARECLIPSES@AULA.COM> Date : Wed, 30 Jan 2002 08:56:28 -0500

It is fine that B.A. Tafreshi could see the total solar eclipse.

However, he made an "horrible" mistake in his message. Minutes and seconds of TIME should be designed by "m" and "s", respectively, while ' and " may be used only for angular units. A minute of time (1/60 hour) is not the same as a minute of arc (1/60 degree). Hence Tafreshi had a totality of 3m 45s, not 3'45".

I know, this is a "popular" error. We find this error even on most music CDs. But nevertheless that's an error...! Jean Meeus

From : "B.A.Tafreshi" <btafreshi@nojum.net>

Thank you Jean Meeus for correcting my mistake.you are completely right. Babak Tafreshi

20”02’20-02-2002

SENL January now on line

From : FRED ESPENAK <u32fe@lepvax.gsfc.nasa.gov> To : SOLARECLIPSES@AULA.COM, eclipse@hydra.carleton.ca Date : Mon, 14 Jan 2002 12:09:13 -0400

Joanne Edmonds has prepared several more issues of the SENL (Solar Eclipse Newsletter) for the month of January 2002. It's a double issue (Parts A and B) to allow for easier downloads.

All issues are online in pdf format and can be accessed via the SENL index page of MrEclipse.com:

http://www.mreclipse.com/SENL/SENLinde.htm

Other recent issues currently linked from the above page include:

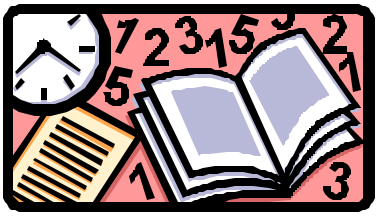
SENL - July 2001 (Special A) (1.2 MB pdf file*)
SENL - July 2001 (Special B) (0.7 MB pdf file*)
SENL - July 2001 (Special C) (0.7 MB pdf file*)
SENL - August 2001 (Part A) (1.0 MB pdf file*)
SENL - August 2001 (Part B) (0.6 MB pdf file*)
SENL - September 2001 (Part A) (1.0 MB pdf file*)
SENL - September 2001 (Part B) (1.0 MB pdf file*)
SENL - October 2001 (1.0 MB pdf file*)
SENL - November 2001 (Part A) (0.7 MB pdf file*)
SENL - November 2001 (Part A) (0.8 MB pdf file*)
SENL - December 2001 (1.3 MB pdf file*)

SENL - January 2002 (Part A) (0.7 MB pdf file*)
SENL - January 2002 (Part B) (1.3 MB pdf file*)

Note that all these files are in Adobe pdf format and can only be read with Adobe Acrobat Reader. This software is free and can be downloaded from Adobe's web site (http://www.adobe.com/).

Thanks for the hard work Joanne! - Fred Espenak

P.S. - Please note Joanne's announcement (January 2002 - Part A issue) that she and Patrick are getting married in February. Congratulations!



SETalk

The 1925 TSE in New York City

From : Michael Gill <eclipsechaser@yahoo.com> To : "SOLARECLIPSES@AULA.COM" <SOLARECLIPSES@AULA.COM> Date : Thu, 24 Jan 2002 02:47:59 -0800 (PST)

I feel that I cannot let the 77th anniversary go by unremarked:

Around January each year there are messages posted to the SEML about the TSE in New York City in January 1925 (posting by Bob Morris on the usage of the term 'diamond ring' in January 1999; posting by John Hopper in January 2000 about his mother's recollections; posting by Glenn Schneider in January 2001 about his grandfather's experiences).

It is hardly surprising as this eclipse was well seen from a major city (familiar to many SEML members) and the weather was favourable. Personally, I find these accounts fascinating.

Most SEML members are, I'm sure, familiar with the interesting observational experiment carried out at the southern path edge of that total solar eclipse.

I recently obtained a copy of 'Observations of the Total Solar Eclipse of January 24, 1925 made by Electric Companies affiliated with the Consolidated Gas Company of New York' which documents this experiment.

A group of 149 observers were assembled and divided into teams of two or three men. Each team was then stationed at specific locations on the roofs of buildings on the western edge of Manhattan Island from 72nd street to 135th street.

There were 73 stations in all, mostly on Riverside Drive, but also on West End Avenue, Broadway and Amsterdam Avenue. The locations on the city's western edge provided an outlook over the Hudson in the direction from which the shadow approached as well as an unobstructed view of the Sun in the east.

Three further locations were chosen off the eastern edge of Manhattan Island – one was on the property of the Astoria Light, Heat and Power Company (A.L.H.& P. Co.). Two other locations were on the connecting bridge of the New York, New Haven and Hartford Railroad Co. that linked Long Island with The Bronx.

Each team was divided into an Observer A and an Observer B. Observer A was instructed to watch the surface of the river and the ground and to report whether the edge of the shadow passed to the north or the south of where he stood. Observer B was to watch the Sun (using overexposed photographic film as a filter) and to report whether he saw the Sun completely covered or just partially covered.

When the results were analysed it was found that the Observer A from each team could not see the position of the shadow on the ground and that this method was wholly ineffective in defining the southern limit of the track.

However, more success was obtained from the method used by the Observer B. A definite line was established between No. 230 Riverside Drive (just south of 96th St) and No. 240 Riverside Drive (just north of 96th St.). An approximate distance of 225 feet separated the observers on the roofs of these two buildings and the southern limit of the total eclipse track passed between them. (In John Hopper's post to the SEML two years ago about his mother's experiences in 1925 he wrote: 'She lived at 315 West 97th Street at the time, at the corner of Riverside Drive. Recent posts on this list say that totality reached 97th Street but not 95th Street, so she was indeed in a very special place.' She certainly was! Looking at a satellite photo of the area on mapquest.com you can see just how close together these addresses are.)

Over to the east of the city, two groups reported seeing totality. One group was on the bridge between Randalls Island and Wards Island, the other in the coal yard of the A.L.H. & P. Co. The third team saw a partial eclipse (on the bridge connecting Wards Island and Long Island – some consolation for them missing out on totality was the sighting of shadow bands at their location). The distance between the two nearest groups was apparently 750 feet.

SETalk

The day before the eclipse, the New York Times published a map showing the expected position of the southern limit of the track of totality. The data collected by the observers on January 24th 1925 showed that the actual path of the southern limit was displaced slightly to the north of the New York Times map.

On page 10 of the above publication, a graphic shows a map of Manhattan with the position of the observing teams. A square symbol on the map depicts the location of observing teams who saw (a brief) total eclipse, a circle depicts the location of observing teams who only saw a partial eclipse. Contrary to what I've read elsewhere about there being observers stationed on alternate cross town streets, the graphic in this publication shows a team on every street.

For those on the SEML familiar with the layout of Manhattan, although the southern limit crossed Manhattan in a west-to-east direction, Manhattan's avenues are not perfectly aligned in a north-to-south direction. So, the cross streets are slightly offset from the west-to-east direction. This meant that although an observer standing on the corner of 97th St. and Riverside Drive would have been inside the track of totality, someone standing on the corner of 97th St. and Central Park West would only have seen a partial. The map in the publication mentioned above shows the southern limit passing through Wards Island. Michael Gill

From : Evan Zucker <ez@AbacusTotality.com>

I'm glad I'm not the only person who thinks of that eclipse each January.

>I recently obtained a copy of 'Observations of the .../...

Wow! Where did you get that from?

>When the results were analysed it was found that the .../...

Duh! I guess the uselessness of this method wasn't as obvious back then as it is to us today.

>However, more success was obtained from the method u.../...

North-south blocks in New York are supposed to be 1/20 of a mile long, or 264 feet. If that's correct, it sounds as if those observers were nearly a block apart rather than just south and just north of 96th Street.

>For those on the SEML familiar with the layout of .../...

Fascinating! I'm a native New Yorker and knew about the alignment of Manhattan island, but I had never thought about the street alignment being different than the alignment of the edge of the shadow.

That's also why the sun does not rise and set directly down Manhattan streets on the same day around the equinoxes. The New York Times recently published a very interesting article about how the sun shines in Manhattan at different times of the year and the extreme measures some New Yorkers take to grab a few moments in the sun in the normally dark skyscraper canyons. You can read the abstract (which might require free registration) at: http://query.nytimes.com/search/abstract?res=F20F10FB3A5B0C758DDDAB0994D9404482. It costs $2.50 to read the entire article. Unfortunately, that probably won't include the photos and graphics that appeared in the print edition. Evan H. Zucker San Diego, California

From : Glenn Schneider <gschneider@mac.com>

And, as Evan may well remember in the days of our youth as sun NYC worshipers we used to watch lunar and partial solar eclipses, and planetary transits from atop the Empire State building to get out of those obscuring canyons! With all the RF hash up there from the array of radio an TV towers we could not receive WWV for time signals due to interference. So, for at least once such event we received permission from NBS to rebroadcast WWVs signal over a commercial FM station in NY - which we did, probably to the confusion of a great many New Yorkers who were tun-

(Continued on page 30)

SETalk

ing in to Pacifica Radio for the Dr. Demento show... With there transmission antenna just a few meters above our heads we had NO reception problems! -GS-

From : Donald Watrous <watrous@cs.rutgers.edu>

It has one picture. It's at http://www.nytimes.com/2001/12/16/nyregion/thecity/16FEAT.html Don

From : JohnLX200@aol.com

Fascinating.

I was about to call my mother to ask what her address had been, but I guess I already did so last year, and then forgot it! I'm sure she'd say "I told you the address last year, is your memory slipping?" She's doing fine, by the way.

This is the first time I'd heard for certain that the (great majority of) observing teams were actually stationed on Riverside Drive, as I had no idea which "avenue" of Manhattan they'd been on. So they were on the same one as Mom and her father.

I was really struck by three details.

1. That the observing teams were on Riverside Drive.
2. That they used overexposed film to view the partial phases.
3. That some or all observed from building rooftops.

She had mentioned to me that a man had seen her and her father squinting to see the partial phases and that he then provided them with overexposed film. (Black and white, of course, as all film was then.) Prior to now, my only reaction to this was that it was very good that this happened so she didn't hurt her eyes just before her 9th birthday, and that it was very bad that she probably completely missed the instant of totality due to the admonition not to look at the sun except through the film. This is probably why she didn't become an eclipse chaser. ;-)

Perhaps the man handing out the film may have been on one of the observing teams.

As my grandfather was a building superintendant by trade (of that building at that time, I believe) he may very well have been the person who then gave one team access to the roof.

I'd be very interested to know if a team was stationed either on the ground or on the roof of 315 West 97th Street at the corner of Riverside Drive. Perhaps all addresses were given as equivalent numbers along Riverside Drive, or perhaps only buildings on the Drive proper had their roofs used.

That there are documents surfacing and allowing us to reconstruct the events of that day is simply amazing. My sincere thanks to Michael Gill for putting together such a well-documented post about the 1925 eclipse.

SETalk

I'll be out of touch from this email address for a few days, but anyone seeking private correspondence may send it to sales@astrobuffet.com, which forwards to my wireless email pager. John Hopper

From : Evan Zucker <ez@AbacusTotality.com>

Thanks for finding the free article. I've found that you can sometimes find stuff at nytimes.com for free even when it's available for a fee through the archive service. -- EVAN

From : Dribalz@aol.com

I saw the December 9, 1992, total lunar eclipse from atop the Empire State Building. This was the eclipse where the moon rose full and eclipsed as it rose. I begged my boss to let me out of work early and hopped aboard the subway to get close to the building and then ran the rest of the way. Made it to the top, but missed the rising moon. It was already eclipsing as I got to the top. Still, it was fun to watch.

I had set up my video camera at home to face the azimuth of the rising moon and programmed it to take a 1 second shot every minute. I left for work that morning and when I got home to Long Island from the Empire State Building, I viewed a beautiful 30-40 second time lapse of the full moon rising over a neighbors house and being eclipsed. Success! Andrew Hans

A COMET'S BRUSH WITH THE SUN

From : "John Wagoner" <stargate@astromax.com> SKY & TELESCOPE'S NEWS BULLETIN - JANUARY 11, 2002

Right now the periodic comet known as Machholz 1 is its closest to the Sun, just 19 million kilometers away. Human eyes cannot see the rendezvous, because the comet is positioned just a few degrees from our star in the sky. But if we could, we'd be dazzled -- the comet's near-solar experience has turned its icy nucleus into a fizzing factory of gas and dust that has spawned a tail several degrees long. Fortunately, the NASA/ESA Solar and Heliospheric Observatory has captured the comet's arrival. The spacecraft's Large Angle and Spectrometric Coronagraph, which continuously monitors conditions in the solar corona, picked up the comet in its wide field of view yesterday and has recorded its passage in a remarkable series of images.

When amateur skygazer Don Machholz discovered this comet in May 1986, astronomers initially thought it would make one quick pass through the inner solar system and then disappear forever. But they soon realized that Machholz's find was a periodic comet that orbits the Sun every 5.3 years, traveling in a looping trajectory that extends beyond the orbit of Jupiter. "This is really a remarkable orbit," observes Daniel W. E. Green (Harvard-Smithsonian Center for Astrophysics), in that the comet spirals a little nearer to the Sun at each perihelion then evolves outward over a 4,000-year-long cycle. By the year 2450, should Machholz 1 survive that long, it will pass only 5 million km (0.03
astronomical unit) from the Sun.

SETalk

Comets

From : Daid Topper <David.Topper@DS1.UWINNIPEG.CA> To : HASTRO-L@WVNVM.WVNET.EDU Date : Sat, 26 Jan 2002 16:09:27 -0600

The great comet of 1680 was seen streaking towards the sun in November and then away from the sun in December through March (1681). But Newton and others initially thought these were two different comets. Comets were generally thought to follow a straight line and thus not orbit the sun. But when he wrote the Principia, Newton assumed this one comet orbited the sun, and he shows it as such in the famous drawing - the only one in the entire book.

But this raises a question: why was not the orbital nature of comets realized earlier? I've read that the comet of 1664 orbited the sun in the opposite direction of the planets and hence was seen by some as evidence against the vortex aether theory. Also what did Tycho observe regarding the comet of 1577? Did he think it orbited the sun? And there were 5 other comets over Europe from 1580 to 1596.

My tentative hypothesis is that most comets were not seen both approaching and receding from the sun, since the tail increases after rounding the sun. This indeed is shown in Newton's drawing. So therefore were most comets only visible when moving away from the sun? That would explain the persistence of the straight-line idea. But, still, what about the comet of 1664, which I believe Newton observed as a student? David Topper University of Winnipeg

From : Herbert Prinz <hprinz@ATTGLOBAL.NET>

It was only Kepler who introduced the idea of rectilinear motion of comets. Brahe thought the orbits to be circular around the sun. He placed the orbit of the comet of 1577 somewhere outside Venus, determined its inclination w.r.t. the ecliptic and tried to establish uniform motion with moderate success. Herbert Prinz

From : Sara Schechner <schechn@FAS.HARVARD.EDU>

This conundrum disappears when we consider not only the observed motions of comets historically but also the matter theory and physics of comets. In my opinion, the two cannot be separated.

Reports of comets dating back to antiquity show them to have been seen moving in all different directions relative to the sun and moon and planets. Some comets moved with their tails following them--in our understanding, they were headed towards the sun. Others moved with their "tails" preceding them, and so were called "bearded stars" by Aristotle--in our understanding, they were headed away from the sun. The relationship of the tails to the sun was not recognized until about 1531. Nevertheless, since abundant records of comets with tails and beards survive for nearly 2000 years, David's hypothesis does not explain the reason that orbits were not calculated for comets. It was not simply a matter of inequitable observation. Indeed, the opposite is true: the wayward paths of comets reinforced the belief that the comets could not be in the heavenly regions of the planets or sun. That was the region of perfection and eternal circular motion. Rather, the short-lived, skewed paths of comets led natural philosophers and astronomers to place them below the moon and treat them as transitory meteorological phenomena. Until the 16th century, it was held that comets consisted of burning exhalations in the upper atmosphere. A comet's motion was explained by its following its source of fuel just like flame travels along a wick. Subscribers to this view had no good reason to want to calculate an orbit for a comet; it would be like computing the orbit of a cloud.

The burning nature of comets was questioned in the 16th century by Apian, Cardano, Pena, Maestlin, Tycho, and Kepler when it was known that the comet tails pointed away from the sun. They offered theories that comets were translucent bodies through which sunlight refracted.

With Tycho's careful study of the parallax of the comet of 1577, most astronomers conceded that comets could be above the moon. Elevating comets into the celestial realm did not solve the problem of what they were made or how they arose--there were many theories--but it led astronomers to consider their paths with greater care. Some non-Aristotelians like Maestlin and Tycho believed the tracks to be pieces of great circles. Kepler thought they were rectilinear paths. It was widely debated in the 17th century whether comets moved in curved or straight paths through the heavens (as wonderfully illustrated on the frontispiece of Hevelius' Cometographia).

SETalk

Newton and Halley were not the first to argue that some comets moved in closed orbits; they were the first to argue it successfully and to have not only the astronomical observations but also the physical theory to back it up. Before Newton and Halley, Ward, Cassini, Petit, Bernoulli, and Flamsteed expressed the view that comets were periodic.

Newton observed the comets of 1664, 1665, 1680, and 1681. When he couldn't describe a rectilinear path for the 1680 and 1681 comets, he began to question that theory. In correspondence with Flamsteed in 1681, he began to consider dynamical effects of forces on the comets and the possibility that the two comets were one. Sometime between 1681 and 1684, he applied his theory of gravitation to the comet of 1680-1681 and treated it dynamically in the same way that he treated planets.

David, I hope this helps to answer your question. [For more details, please see my book, _Comets, Popular Culture, and the Birth of Modern Cosmology (1997)_] Sara

From : Ad & Nicole Meskens Van der Auwera <ad.meskens@PANDORA.BE>

D.K. Yeomans, Comets, A chronological history of Observation, Science, Myth and Folklore, J. Wiley, New York etc., 1991 T. Van Nouhuys, The age of the Two-faced Janus: the comets of 1577 and 1618 and the decline of the Aristotelian world view in the Netherlands, Brill, Leiden,1998.

Throughout the 16th and 17th centuries the discussion about comets also revolved around the sub- or superlunar nature of comets. For instance as late as 1651, Riccioli wrote that the observations of 1618 showed that there is a great likelihood that comets are superlunar.

From : Sara Schechner <schechn@FAS.HARVARD.EDU>

Yes. And of note, Galileo stands out in support of the sublunar nature of comets. Sara

From : Ad & Nicole Meskens Van der Auwera <ad.meskens@PANDORA.BE>

Indeed, while the jesuits (otherwise staunch aristotelians) defended the superlunar nature! Ad

Balloon in front of eclipsed sun looks like Venus transit

From : "Olivier \"Klipsi\" Staiger" <olivier.staiger@span.ch> To : <SOLARECLIPSES@AULA.COM> Date : Fri, 25 Jan 2002 12:37:53 +0100

in october '96 I watched the partial SE from home in Geneva, and caught a balloon drifting in front of the eclipsed sun on video. just put some short video clips on http://eclipse.span.ch/ballon.mpg and http://eclipse.span.ch/balloon96.rm (realplayer)

sure looks like a quick animation of venus transit ;-) Klipsi

UMBRAPHILE Eclipse S/W Update - Version 2.4.0

From : Glenn Schneider <gschneider@mac.com> To : SOLARECLIPSES@AULA.COM Date : Mon, 28 Jan 2002 10:12:16 -0700

I have updated UMBRAPHILE to version 2.4.0 and put it on my server at: http://balder.prohosting.com/stouch/UMBRAPHILE.html

If you are an UMBRAPHILE user, please download this version, as 2.3.x is now obsolete. Please see the Release Notes on the above page for information on the update. Please report any residual bugs, (or suggestions, which are always welcome) to me by e-mail. Cheers, Glenn Schneider

SETalk

Yohkoh Sun-watching craft remains out of commission

BY STEPHEN CLARK SPACEFLIGHT NOW Posted: January 28, 2002

Engineers continue to pursue attempts to recover the decade-old Yohkoh solar probe after a chain of events last month halted science observations.

The troubles began on December 14, when Yohkoh began passing through a deep eclipse of the Sun, momentarily upsetting the spacecraft's attitude control system. Because the observatory was passing out of range of ground stations, controllers were unable to immediately get the satellite's systems back to normal.

The delay in contacting Yohkoh resulted in the spacecraft drifting off the correct pointing to the Sun, causing the solar panels to stop charging correctly. When the ground team was finally able to communicate with the satellite again, they found it drifting and with low power levels of around 15 volts in its batteries. Even switching off the craft's intruments did not help the electrical situation. The batteries lost even more voltage in the days following the occurrence, with levels dropping to around 4 volts on December 17.

Yohkoh project manager Takeo Kosugi characterized the events as a "chain of unlucky troubles" in a presentation at the Yohkoh 10th Anniversary meeting in Hawaii last week.

The episode that has befallen Yohkoh is similar to what happened to the SOHO observatory in 1998, when a full recovery was made.

"We are now waiting for warmth to return to the batteries, monitoring the conditions and studying ways and means of getting the batteries charged once again, and -- if successful at that, a big "if" indeed -- then re-orienting Yohkoh and establishing normal operations," said a statement issued shortly after the incident.

Over six weeks have passed since the initial event that triggered the barrage of events leading to the current status of the now-crippled Yohkoh spacecraft, and very little progress has been made.

The team is "still struggling" with recharging the craft's batteries, Kosugi reported. At least 7 volts of electrical output are required to get the restoration process moving along. If the electrical side of the recovery is corrected, next would come the reactivation of the attitude control system, allowing the spacecraft to resume pointing toward the Sun. Other systems and instruments aboard Yohkoh would then be switched on, completing the revival of the international solar studies spacecraft.

However, Kosugi's presentation said that there are no good expectations for the current recovery attempts to succeed.

With no luck thus far in bringing the satellite back to life, officials may eventually be forced to make a decision to end the efforts to bring Yohkoh back on-line. "We'll continue attempts at least one more month," Kosugi told Spaceflight Now.

A joint mission between Japan, the United States, and the United Kingdom, Yohkoh was launched in August 1991 on a mission to study X-ray and gamma ray emissions from the Sun. Orbiting at an average altitude of 650 kilometers, Yohkoh spends around two-thirds of each 90-minute trip around the Earth bathed in sunlight to afford the best data.

Coronal Polarization - Revisited

From : "Glenn Schneider @ Home" <gschneider@mac.com> To : SOLARECLIPSES@AULA.COM Date : Tue, 29 Jan 2002 01:05:41 -0700

The subject of coronal polarization has come up several times in this forum. For those interested, I have (finally!) analyzed the polarimetric mid-coronal images I took during the 2001 TSE, and have put a pictorial representations of the quantitative results on: http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_01/ECLIPSE_2001_REPORT.html

(bottom part of the page). Cheers, Glenn Schneider

SETalk

Online book Walter Maunder

From : "Patrick Poitevin" <patrick_poitevin@hotmail.com> To : SOLARECLIPSES@AULA.COM Date : Mon, 28 Jan 2002 20:23:00 +0000

For those interested: The Astronomy of the Bible by E. Walter Maunder F.R.A.S.

see http://www.cwru.edu/UL/preserve/stack/AstroBible.html

With the chapter about solar eclipses:

CHAPTER XI. ECLIPSES OF THE SUN AND MOON Vivid Impression produced by a Total Solar Eclipse- Eclipses not Omens to the Hebrews-Eclipses visible in Ancient Palestine-Explanation of Eclipses-The Saros-Scripture References to Eclipses-The Corona-The Egyptian " Winged Disc "-The Babylonian LL Ring with Wings "-The Corona at Minimum . . . page 118

From : "John M. McMahon" <mcmahon@MAIL.LEMOYNE.EDU> HASTRO-L@WVNVM.WVNET.EDU

Apologies if folks know about this. The Astronomy of the Bible by E. Walter Maunder F.R.A.S.

http://www.cwru.edu/UL/preserve/stack/AstroBible.html John McMahon Le Moyne College

From : Peter Nockolds <ASTROLIT@AOL.COM> To : HASTRO-L@WVNVM.WVNET.EDU

The author's foreword is dated 1908. The work is published by Hodder and Stoughton, who seem historically to have enjoyed a close relationship with the Church of England. At the back is a lengthy list of theological and religious literature. In those passages I have read the writer's Christian sympathies are apparent, though hardly in a way to invalidate his comments.

I've had it on my shelves for a few years and despite studying in this area haven't looked at it much. From previous browsing it seemed terribly dated, and I didn't much care for the overtly religious sentiments. However I've taken another look and it does seem to contain a number of good things for those who may not be familiar with them from other sources. However like Allen's 'Star Names' it probably needs a good deal of sifting.

It does contain a few ideas that may not be acceptable to all list members, namely that the Metonic cycle was known well before Meton, and may be found in the Bible, (Bk III ch VI)) that precesssion was known several centuries before Hipparchus (Bk III ch IV) and that for the most part the constellations were defined in the form known to Aratus several thousand years ago.(Book II, chs I and II)

If out of copyright it would be worthy of a budget reprint (cf Emmeline Plunket's Calendars and Constellations of the Ancient World 1903 and 1997) Even if it is on-line I think plenty of people would pay £2 for a hard copy. (Any publishers listening?) Peter Nockolds

From : Gary Thompson <gtosiris@MPX.COM.AU> To : HASTRO-L@WVNVM.WVNET.EDU

Hi I have only just begun to look at Maunder's religious beliefs. At one time Maunder was the astronomy referee for The Wesley Naturalist. I have recently come across a reference that states both he and his second wife Annie were Pentecostalists. (Pentecostalism is an evangelical fundamentalist Christian movement.) Maunder's Pentecostalism might be associated with the Keswick Conventions of the 1870's. (The Maunder expert is Tony Kinder, Director of the History Section of the British Astronomical Association.)

Regarding your copy of the book containing advertisements for religious literature. The book was published at least 3 times in 1908. You would seem to have a genuine first edition (which I understand is quite rare).

SETalk

> I've had it on my shelves for a few years and despite studying in this area haven't looked at it much. From previous browsing it seemed terribly dated, and I didn't much care for the overtly religious sentiments. However I've taken another look and it does seem to contain a number of good things for those who may not be familiar with them from other sources. However like Allen's 'Star Names' it probably needs a good deal of sifting.

From the late 1870's Maunder's approach to the history of the constellations was shaped by Rolleston's bible in the stars book "Mazzaroth." Though he later criticized it's ideas his articles later in life still showed a bible in the stars belief, though somewhat more restrained. (He believed that the people who originated the constellations did so with the intention of preserving some early parts of Genesis.)

> It does contain a few ideas that may not be acceptable to all list members, namely that the Metonic cycle was known well before Meton, and may be found in the Bible, (Bk III ch VI)) that precesssion was known several centuries before Hipparchus (Bk III ch IV) and that for the most part the constellations were defined in the form known to Aratus several thousand years ago.(Book II, chs I and II)

To get his early date for the origin of the constellations Maunder revived the "void space" arguments of the Swedish amateur astronomer Carl Swartz. In doing such it would seem that Maunder was somewhat influenced by his religious convictions regarding an early date for the constellations. In his own day both the astronomer Mary Orr, and the classicist Thomas Arnold effectively demolished the reliability of the "void space" method to date the constellations. (Maunder also believed that the early origin of 48 primitive constellations as a set necessarily implied an advanced astronomy.)

> If out of copyright it would be worthy of a budget reprint (cf Emmeline Plunket's Calendars and Constellations of the Ancient World 1903 and 1997) Even if it is on-line I think plenty of people would pay £2 for a hard copy. (Any publishers listening?)

A recent reviewer of Plunket's book remarked that due to its outdated ideas and erroneous information it was not worth the effort of reprinting. (Also, some reviewers felt similarly about the original edition.)

A 1908 reviewer of Maunder's book stated: "There is much in the book that is interesting and valuable; when the author gets outside the supposed necessities of his apologetic he is well worth attention." (Interestingly, in the last pages he sets out the deep well myth.) Gary Thompson

From : Peter Nockolds <ASTROLIT@AOL.COM> To : HASTRO-L@WVNVM.WVNET.EDU

Thank you Gary for that background which makes Maunder's book all the more interesting. It seems that we, and the 1908 reviewer are in accord about the value of the book (although mine is a third edition)

> A recent reviewer of Plunket's book remarked that due to its outdated ideas and erroneous information it was not worth the effort of reprinting. (Also, some reviewers felt similarly about the original edition.)

The publisher's accountant might differ. For myself the book was worth the £2 because it shows that, as you have pointed out, many of the themes in contemporary astro-mythic writing, including precession, have 19th century antecedents. It seems to share some common background with Maunder's work, and in its day may have been seen as reasonably 'mainstream' as it contains many reprints from the respectable-sounding 'Proceedings of the Society of Biblical Archaeology'.

I didn't see the work listed in the bibliography to 'Hamlet's Mill' but those with an interest in that book may find it worth acquiring a copy. (The publishers are Senate and it may well be stocked in larger bookstores: I bought mine off-the-shelf in Borders). Peter Nockolds

From : "Robert B. Ariail" <Skyhawk-@MINDSPRING.COM> To : HASTRO-L@WVNVM.WVNET.EDU

Hi Gary, This bit of information may be paltry but possibly of some small interest. My second edition of E.W. Maunder's THE ASTRONOMY OF THE BIBLE has no date. However, the preface to the book details the first edition and dates it at January 1908. It also states the following: "In this second edition I have added a few paragraphs where it seemed desirable to bring forward new information; but the rapidity with which the first edition has been taken up has precluded the necessity for any material revision. F.W.M." This second edition is dated: St. John's , London, S.E. May 1908

I think your statement concerning the rarity of the first edition to be precise. Since it sold out rapidly (apparently within five months) it must have been issued in small volume. Nevertheless, I was surprised to find only a single second edition of the book in the Catalogue Of The Naval Observatory Library (1976). This even though a number of other works were listed on and by Maunder. Also, neither the Bibliographie Generale de l' Astronomie, Houzeau & Lancaster; The History of Modern Astronomy and Astrophysics, DeVorkin; nor Astronomie And Astrophysics A Bibliographical Guide, Kemp; listed the book in question. I

(Continued on page 37)

SETalk

did find in the: Catalogue Of The Library Of The British Astronomical Association (Compiled To 1936, July 31), a copy of the volume dated 1922. Could this be a third edition? As Maunder died in 1928, this probably was the last issue of the work. It appears that all additions of this book may have been quite rare especially for a 20th century publication. The above details were hurriedly gathered. If there is further interest in the various editions, I will be happy to check in greater detail. Bob Ariail

From : Gary Thompson <gtosiris@MPX.COM.AU> To : HASTRO-L@WVNVM.WVNET.EDU

Precession was a rather common theme in late 19th-century astro- mythology books. A minor poet, Plunket took up the theme of astro-mythology, etc, in the 1890's and her book was not a very capable example. (She followed the erroneous ideas of Archibald Sayce and Fritz Hommel.) For Maunder's demolition of Plunket's book see Knowledge & Scientific News, Volume 1, Number 1, February 1904, Pages 1-3. Gary Thompson

From : Gary Thompson <gtosiris@MPX.COM.AU>

Bob, Hi. Thanks immensely for the information you supplied. It was greatly appreciated. Prompted by your information I have done a reassessment of its publishing dates.

The publication history for Maunder's "Astronomy of the Bible" seems to be:
First edition: January 1908.
Second edition: May 1908.
Third edition: 1909.
Fourth edition: 1922.

My copy is Third Edition (MCMIX) but a prior owner (?) has put a line through MCMIX and written above it 1908. I now disbelieve this "correction." (I had checked against how Maunder referenced The Astronomy of the Bible in his article on astrology in The International Standard Bible Encyclopaedia, first published in 1915. The publication date of 1908 is given.)

Interestingly my third edition, unlike that owned by Peter Nockolds, has no advertisements for religious books. Maybe all copies printed were not bound at the same time (or several printings occurred).

The added paragraph to the preface reads: "The favour with which the first and second editions were received, the latter being called for only four months after the appearance of the first, seems to show that the book in its present form is generally acceptable. A few paragraphs have, however, been altered in the third edition where it seemed desirable to bring forward new information."

The third edition comprises: xvi, 410 pages, 34 illus. Thanks again. Gary Thompson

From : Peter Nockolds <ASTROLIT@AOL.COM>

The advertisements, which cover 10 sheets, seem to be printed on a slightly different paper to the rest of the book and are inserted after the sheet bearing the printer's name, which latter sheet follows the index.

In every other respect mine matches the description given by Gary of his third edition. However http://www.abebooks.com/ lists two editions, one 2nd and 3rd, both in red cloth: mine is in green cloth. Peter

From : Gary Thompson <gtosiris@MPX.COM.AU>

The second edition is an American printing. The third edition is an English printing. GDT

From : Nicholas Campion <ncampion@CAOL.DEMON.CO.UK>

Has nobody mentioned yet that this is the same Edward Walter Maunder after whom the Maunder minimum in sunspot data is named? Nick Campion

From : "Robert B. Ariail" <Skyhawk-@MINDSPRING.COM>

Hi Gary, Thank you very much for putting all of the details into exact order and adding additional information as well. The picture on this work is becoming clearer I think.

> ... However http://www.abebooks.com/ lists two editions, one 2nd and 3rd, both in red cloth: mine is in green cloth.

>The second edition is an American printing. The third edition is an English printing. GDT

My copy (second edition) is bound in blue cloth with a decorative gold leaf illustration on the cover. It was published by: T. Sealey Clark & Co., LTD., London It also comprises: xvi, 410 pages, 34 illus. and contains no advertisements. Bob

From : Peter Nockolds <ASTROLIT@AOL.COM>

My 3rd edition, green cloth, was printed by Richard Clay and Sons Ltd, Bread Street Hill E.C. (London) and Bungay, Suffolk (UK).

(Continued on page 38)

SETalk

Thanks Nick, I wasn't familiar with the Maunder minimum. A simple search shows EWM listed as a creationist at http://www.ldolphin.org/creationism.html. However the author of the site takes a much broader view of the term 'creationism' than do many others. Peter

Eclipse comet 16 April 1893

From : "Patrick Poitevin" <patrick_poitevin@hotmail.com> To : SOLARECLIPSES@AULA.COM Date : Thu, 24 Jan 2002 06:54:20 +0000

The Eclipse Comet of 16 April 1893, discovered on plates by Schaeberle in Chili, has never been mentioned as an eclipse comet in general eclipse books. Jan Cuypers of the Royal Observatory in Brussels and I wrote an extended article about Eclipse Comets a few years ago, and this Eclipse Comet was one of the discoveries (as well as the non existence of the 1947 Eclipse Comet - not observed during the eclipse, but the night before). Though, it is proven the 1893 was an Eclipse Comet. See my contributions on Fred's website: http://www.mreclipse.com/SENL/SEComets/EC18930416.htm

I have been lucky and found and purchased the original book of Schaeberle: The Solar Eclipse of 16 April 1893. The description and even the plates (original photo's) are in the book. Very fascinating book, published in 1895, in general as well.

The Eclipse Comet has been found on plates of the English expedition to Brazil and Africa as well (by Fowler). Movement of the comet was noticed and measured on the plates. Does anybody know where those plates can be found or have been published?

I will publish some scans of the Schaeberle plates in one of the next Solar Eclipse Newsletter. Cheers, PP

From : "76630,2206" <76630.2206@compuserve.com>

It may be helpful, given the availability and quality of scanning equipment presently, to acquire and scan negatives of these early total eclipses. Besides the Nikon Coolscan, there are flatbed and drum scanners with very large D-maxes of 3.8 and higher.

It could be worth the effort to create a library of these images. --Robert B Slobins

From : KCStarguy@aol.com

It was noted in the eclipse archives about eclipse comets, that Hal Bopp was seen during the 1997 eclipse. Does anyone know of photos that were posted in the web showing it during totality? Dr. Eric Flescher (KCStarguy@aol.com)

From : Vic & Jen Winter <webmaster@icstars.com>

From stories I've heard of the poor weather during the Mongolian Eclipse, I think most who witnessed the eclipse were feeling lucky to see totality, much less the comet.

Perhaps the anonymous Mr. "Big NOSE" has some first-hand reports he can share.

From : "Patrick Poitevin" <patrick_poitevin@hotmail.com>

The team of Joel Moskowitz did observe the eclipse north of Chita, and Hall Bobb during totality. Daniel Fischer and his team did observe the eclipse successfully as well but did not see the comet during totality. Our team (Valentin and Rita Kinet, Wasyl Moszowski and I) observed the eclipse perfect in MoHe. Wasyl did see the comet during totality as well but. Further: Observations during totality were made successfully at clear sky both in Pervomaiskij (Y. Suematsu et al., T. Pinter et al., IZMIRAN team (B. Filippov and M. Molodensky et al.), Rozanov et al. (radio observations), Kim et al., V. Koulidjanishvili, and several amateurs from Italy, France, Russia) and in Erofei Pavlovich (Eva Markova et al. and Grigiriev et al.).

Shigemi Numazawa and his expedition for the Japan Planetarium Laboratory was somewhat more successful. They obtained images of both the eclipsed Sun and, during totality, Comet Hale-Bopp.

Numazawa's Web site is http://www1.nisiq.net/~numazawa/mongole.html, but the Hall Bob picture is not in there anymore. PP

From : "Olivier \"Klipsi\" Staiger" <olivier.staiger@span.ch>

I remember seeing a photo somewhere which clearly showed the comet. Don't remember where, will have to research. Klipsi

P.S. the comet's correct name is Hale-Bopp, not Hal Bopp. ;-) , named after Alan Hale and Thomas Bopp, who both discovered the comet the same night from different locations (New Mexico and Arizona), in July 1995, almost 2 years before it reached maximum brightness.

(Continued on page 39)

SETalk

From : "Mick Wolf" <mickwolf@picknowl.com.au>

I was most injterested in your reference to the" non existent comet of 1947".My wife has often spoken of the very spectacular comet that appeared from nowhere in December 1947. But I could never find a reference to it, and anyone we spoke to about it thought she must be confusing it with comet Bennett, the less spectacular and more recent comet of 1969.

Recently we located an old newspaper cutting which refers to this mystery comet, thus providing its existence. On page 3 of the Melbourne Herald of December 1947 Dr.R.deV.Woolley, Commonwealth astronomer, writes,"The brightest and best comet I have ever seen"

From the Melbourne Herald of 10.12.1947: "Observations through the Mt.Stromlo Observatory telescope last night supported the Soyuth African claim tghat the comet,which is probably an unknown one, is the brightest that has been seen visible since the last approach of Halley' Comet in 1910...it has suddenly appeared as a first magnitude object spectacularly visible to the naked eye quite close to the sun" ....its sudden appearance "could probably be explained by the abnormally cloudy weather in the Southern Hemisphere.

"Last night the staff of the Commonwealth Observatory picked out the comet and its tail in the western sky even before the sun had set- a striking illustration of its brightness.

You refer to an eclipse the day after its dicovery. However the Th. von Oppolzer Canon of Eclipses gives the only eclipse for 1947, eclipse no.7518, taking place on 12 Nov. across the northern Pacific,starting as annular between Japan and US, then becoming total, and finishing in Africa.

However,it should be noted that the Oppolzer Canon of Eclipses gives eclipses only to southern latitudes of about -20 deg. and therefore does not include the Ceduna eclipse on 4 December,2002.

Refering back to the comet,I read somewhere(unfortunately I have forgotten where) that there was a comet seen in early 1948, in northern hemisphere I believe, and refered to as the Great Southern Comet. This sounds very much as if it could be the comet as seen in southern skies in Dec. 1947.

Is this the the eclipse comet you are refering to? Dr.Woolley does not mention an eclipse which would not be visible in Australia anyway. There is also a discrepancy in dates - eclipse comet seen the day before the eclipse of Nov.11,and the comet first sightecd in southern skies on Dec.9,1947.

This all rises many interesting questions which perhaps you can solve. With regards Mick Wolf.

From : "76630,2206" <76630.2206@compuserve.com>

(maybe off topic, but I'll share the story anyway...)

The night of discovery was 22 July 1995. That night was the first date with Elisabeth, whom I married four months later.

My first thought was to eat at a local restaurant and then go to a star party somewhere. We went to the New Jersey shore and got romantic instead. We had 2 hours on both Hale and Bopp...imagine discovering a major comet on a first date!

Some of you have met her in Aruba, Romania, or Africa. She has been extremely valuable on the expeditions. Marrying her was clearly one of my best decisions, although the romantic behavior...well... ;-) cheers/Robert B Slobins

(Continued on page 40)

DISCOVERY OF COMET I, 1893.

In *Astronomy and Astro-Physics* for April, 1894, page 307, Professor SCHAEBERLE has described a cometary form which he found on his eclipse negatives taken in Chile on April 16, 1893, and to which he first called attention at the World's Fair Astronomical Congress in August, 1893. In May, 1894, we received copies of the eclipse negatives taken by the British expeditions to Brazil and Africa, respectively. Professor SCHAEBERLE has found the same object on the British plates also. The distance of the brightest part of the comet from the Moon's limb, expressed in fractions of the Moon's diameter, is: Chile, 0.88; Brazil, 1.15 ±; Africa, 1.50 ±. The perihelion passage of this comet must be about April 16. The daily geocentric motion of the comet at the time was about 3¼ degrees.

The comets of 1893 should therefore be numbered:

Comet I. Discovered by SCHAEBERLE;

Comet II. Discovered by { SPERRA, R. DE LUNA, RORDAME and others;

Comet III. Discovered by FINLAY;

Comet IV. Discovered by BROOKS.

EDWARD S. HOLDEN.

LICK OBSERVATORY, 1893, May 8.

SETalk

From : Eric Pauer <pauer@bit-net.com>

CNN had a brief story and photo of the 9 March 1997 total solar eclipse with Comet Hale-Bopp from China. I remember seeing the photo shortly after the eclipse. However, for some reason you can load the story but the photo of the comet/ eclipse does not load properly.

Eclipse offers rare view of comet http://www.cnn.com/ WORLD/9703/09/briefs/china.eclipse/index.html

Perhaps it can be found elsewhere on the web. Regards, Eric

From : KCStarguy@aol.com

I did some searching for a picture of Hale Bopp during the eclipse and this is what I found. More links about the solar eclipse and the comet and the lunar eclipse and that comet below Great stuff. I even got the spelling of the comet right this time. Dr. Eric Flescher (KCStarguy@aol.com) Eric's Black Sun Eclipse website - http://www.ericsblacksuneclipse.com

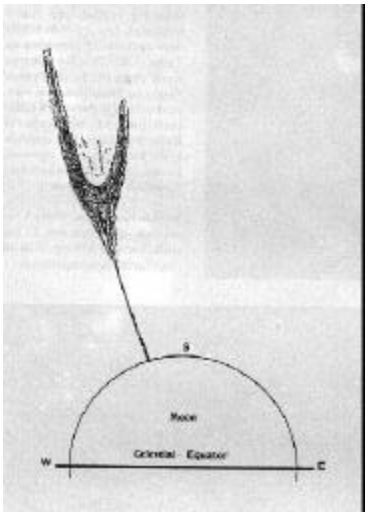
Hale Bopp Comet picture during eclipse March 1997 !!!!!! Great picture at http://www.skypub.com/sights/eclipses/ solar/9703solarreport.html

More information about it at that site

Eclipse Comets Another attraction was Comet Hale-Bopp. John Frost of Sterling, Massachusetts, and three friends traveled to Kyakhta, Russia. It was his sixth eclipse expedition, and he mentions that an additional lure was the chance of seeing Hale-Bopp during totality. Earlier eclipses have revealed naked-eye comets near the Sun, but all were unexpected discoveries. One of the best-known cases occurred in Upper Egypt during May 1882. Although this comet was never seen after the eclipse, it became known as Tewfik's Comet in honor of the presiding Egyptian ruler. The other widely known eclipse comet was discovered in November 1948 during an event visible from East Africa. In the following weeks this object put on a stunning show for Southern Hemisphere observers.

Fred Espenak mentioned both comets on page 9 of the April 1996 Sky & Telescope and asked if were are others eclipse comets buried in the literature. Indeed there are. Writing in the first century A.D., the Roman statesman Seneca cites an eclipse comet chronicled by the Stoic philosopher Poseidonius living in the second and first centuries B.C. Furthermore, several sources point to a comet discovered in A.D. 418 during a July eclipse visible near Constantinople. This comet was followed for four months after the eclipse. While apparently not recognized as such visually, a comet was recorded on photographs made at locations in South America and Africa during the April 16, 1893, eclipse. It was not seen afterward. There is also some question as to whether a feature observed in the corona during July 1860 and another photographed at an eclipse in December 1871 may actually have been comets. In an astronomical first, Comet Hale-Bopp (arrow) was bright enough to be seen and photographed during a total solar eclipse. This view by four members of the Nagoya City Science Museum in Japan is described in the next paragraph.

These sightings aside, it's certain that Hale-Bopp was the first comet in modern times predicted to be within reach of the naked eye during a solar eclipse. Located some 46° north-northwest of the Sun and about 1st magnitude, the comet sported a bright dust tail during totality. Unfortunately, sightings of Hale-Bopp along the western eclipse track were foiled by clouds. But at Shilka, Russia, eclipse chaser Carter Roberts and five friends from the San Francisco, California, area experienced relatively good conditions. "Hale-Bopp was faintly visible to those who remembered to look far enough above the Sun," he writes. At Tynda in eastern Siberia, a Japanese team from the Nagoya City Science Museum also enjoyed excellent observing conditions and were able to see and photograph the comet in the totality-darkened sky. Their 4-second exposure on Fujichrome 400 film with a 20-mm lens set to f/8 is reproduced above. It was obtained by Katsuhiro Mouri, Masahiro Iio, Youko Watanabe, and Hisashi Shimoda. To the right of the Sun are the planets Mercury and Venus (the brighter of the pair).



Comet Hale-Bopp and the Total Solar Eclipse of 1997 Comet Hale-Bopp and the Total Solar Eclipse of 1997. Excitement is growing around the ... umbra.nascom.nasa.gov/eclipse/970309/cometHB.html - 4k - Cached - Similar pages

NASA RP 1369: Total Solar Eclipse of 1997 March 9 ... Note: Comet Hale-Bopp should be visible during the total solar eclipse of 1997 March 3. Further details are

(Continued on page 41)

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available online. ... umbra.nascom.nasa.gov/eclipse/970309/rp.html - 4k - Cached - Similar pages Comet Hale-Bopp Home Page (JPL) ... Co-Discoverer Leads Scientific Eclipse Expedition To Iran (Alan ... 10, 1998); 5,000th Comet Hale-Bopp Image (Ron Baalke - March 26, 1997); One Year Later ... www.jpl.nasa.gov/comet/ - 11k - Cached - Similar pages

Comet Hale-Bopp Timeline - 1997 ... Sep 16 - Full Moon; total lunar eclipse visible from eastern hemisphere; Sep 16 - End of International Comet Hale-Bopp Days, period 4; Sep 29 ... October 1997. ... www.jpl.nasa.gov/comet/timeline.html - 7k - Cached - Similar pages [More results from www.jpl.nasa.gov] Bob Yen's HTTP://WWW.COMET-TRACK.COM ... 9 Solar Eclipse + Comet Hale-Bopp: predictions : J. Charles informative eclipse home page RETURN to Main Page All Images Copyright 1997 Bob Yen / All Rights ... www.comet-track.com/hb/hb.html - 11k - Cached - Similar pages Information on Comet Hale-Bopp for the Non-Astronomer ... Comet Hale-Bopp and the Eclipse of March 9, 1997. Comet Hale-Bopp may be visible during the total ... encke.jpl.nasa.gov/hale_bopp_info.html - 23k - Cached - Similar pages APOD: March 20, 1997 - Springtime Comet Fever

... March 20, 1997 Springtime Comet Fever Credit: A. Dimai and D ... Surface: Under Construction This Sunday's Sky Show: Lunar Eclipse, Mars, and Hale-Bopp. ... antwrp.gsfc.nasa.gov/apod/ap970320.html - 4k - Cached - Similar pages prelim http://umbra.nascom.nasa.gov/eclipse/970309/cometHB.html

great hal bopp photos http://www.mreclipse.com/Astrophoto/HaleBopp.html

Hale Bopp during lunar eclipse announcement http://www.cnn.com/TECH/9703/23/eclipse/

Patricks eclipse March 9, 1997 account ttp://www.star.ucl.ac.uk/~hwm/poitevin.htm

hal Bopp predawn shot in Mongolia http://eclipse.span.ch/halebopp.htm

Daniel Fischer's report of 1997 eclipse ttp://www.geocities.com/CapeCanaveral/5599/eclipse97.html

march lunar eclipse 1997 and Hale Bopp http://www.skypub.com/sights/eclipses/lunar/9703lunarreport.html

From : Jay.M.Pasachoff@williams.edu

I have been interested in the discussion of eclipse comets. Of course, these historic discussions don't include the hundreds of comets discovered by the artificial eclipses of the LASCO coronagraph on the SOHO spacecraft, or the several additional ones discovered by the UVCS coronagraph on SOHO.

In the chapter on early astronomical photography in my book on comets in art (Roberta J. M. Olson and me, Fire in the Sky, Cambridge University Press, hardbound 1998; paperback, 1999, p. 257 with notes on p. 262), we discuss several eclipse comets (p. 257), including 1882, D/1892 T1 (Comet Barnard 3), 1898, C/1898 L1 (Comet Coddington-Pauly), and 1898, C/1898 V1 (Comet Chase) as well as the one reported in 1893 and some comments on false reports.

A paper in the journal Solar Physics by E. W. Cliver was entitled "Was the Eclipse Comet of 1893 a Disconnected Coronal Mass Ejection"? (Solar Physics vol. 122, 1989, pp. 319-333). Patrick's note to this mailing list on January 24 discusses the last of these objects, which may or may not have been a real comet. Patrick: perhaps you may want to add some reference to this paper. Have you looked it up in Kronk'sbook? Jay Pasachoff

From : "Patrick Poitevin" <patrick_poitevin@hotmail.com>

Thank you for the references. I would love so read. Let me know how I can obtain copy.

When I first saw the eclipse comet on the negatives and the plates, I also had the impression that it was a CME or corona streamer in different direction (as one of the 1886 plates I found). Though, when I read the reports and explanations of Schaeberle's 1895 book, with calculations of the comet movement between the South American plates and those from Africa, I was more convinced it was a eclipse comet. Though, I would like to see those African plate myself. PP

From : Jean Meeus <JMeeus@compuserve.com>

Probably this is the solution of the mystery of the "eclipse comet" of 1947:

(1) The bright southern comet 1947 XII (= 1947 n) appeared in December 1947 and was NOT related to any solar eclipse.

(2) The solar eclipse of 1947 November 12 was an ANNULAR one. It was nowhere nearly total. Along the whole central line, the duration of the annular phase was longer than 3 minutes. Consequently, no comet could have been observed during that eclipse.

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(3) There was a total solar eclipse on 1947 May 20. Its path crossed Southern America and central Africa.

(4) The whole story results from an error about comet Rondanina (1947 IV = 1947b), which was discovered on 1947 March 28. In his "Physical Characteristics of Comets" (1964), Vsekhsvyatskii writes about this comet: "20 May, during solar eclipse, observed by Van Biesbroeck with the naked eye". But THIS IS AN ERROR. In fact, Van Biesbroeck saw the comet on eclipse day BEFORE DAWN. Van Biesbroeck wrote the following in "Popular Astronomy", Vol.55 (1947), page 378:

"On the morning of eclipse day, May 20, I saw this object with the naked eye before dawn from the Bocajuva (Brazil) eclipse camp."

Conclusion: the comet really did exist, but is was not an "eclipse" comet! C'est ainsi que l'on ecrit l'histoire... Jean Meeus

From : "Cliff Turk" <cliffturk@yebo.co.za>

Mick Wolf refers to "Dr. R. de V. Woolley," but he surely means the late Dr.(later Sir) Richard Van der Riet Woolley, 11th Astronomer Royal, who has the distinction of having directed three observatories, the Commonwealth Observatory (now Mount Stromlo), the Royal Greenwich Observatory and the South African Astronomical Observatory.

It should therefore be "Dr. R. V. de R. Woolley." This was possibly an error in the original publication in the Melbourne Herald. Cliff Turk

From : "Janita V Hill" <janitah@senet.com.au>

> Mick Wolf refers to "but he surely means the late Dr.(later Sir) Richard Van der Riet Woolley, 11th Astronomer Royal, who has the distinction of having directed three observatories, the Commonwealth Observatory (now Mount Stromlo), the Royal Greenwich Observatory and the South African Astronomical Observatory.

One of the Mt. Stromlo astronomers told us that Woolley was one of three astronomers that they wanted to name a new telescope after. The other two were Reddish and Brown. Most of the staff wanted to call the telescope the: "Reddish-Brown, Woolley Telescope." But the naming committee would have none of it. Janita

From : "Carton, WHC" <Wil.Carton@corusgroup.com>

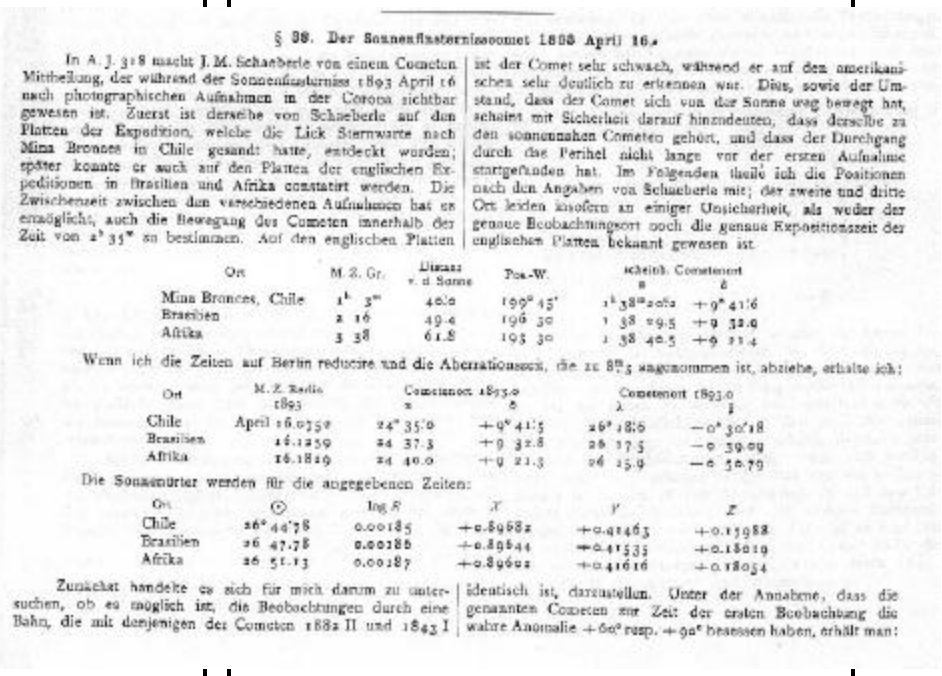
Eclipse friends, Fourty years ago I saw an eclipse book, author R.v.d.R.Woolley in the Amsterdam University Astronomical library. It was published in 1937. And, different from S.A. Mitchell's book about eclipse expeditions, it contained also some mathematical backgrounds. I never understood the abbreviation R.v.d.R in front of Woolley, but now I do. Has someone any idea whether somewhere is still a copy for sale (not an "astronomical" amount of dollars, please)? Wil Carton.

Patrick and Joanne, my firm congratulations and I hope for you an unforgettable wedding day 2-02-2002 and a happy future. I met Patrick as co-member of the Flamish-Dutch eclipse expedition to Malindi, Kenya, in february 1980, and remember vividly his excitement after that event. Wil Carton.

From : "J.P. van de Giessen" <janpieter@giessen.fol.nl>

Wil & others, Title of the book is: Eclipses of the Sun and Moon by F.W. Dyson and R.v.d.R.Woolley.

See: Amazon http://www.amazon.com/exec/obidos/search-handle-form/ref=br_ss_/102-4123572- 4348908 or http://s1.amazon.com/exec/varzea/ts/exchange-glance/Y02Y0459559Y0847896/qid= 1012407589/sr=1-1/102-4123572-4348908 the price is $29.00 Jan Pieter van de Giessen



§ 38. Der Sonnenfinsternisscomet 1893 April 16.

In A. J. 318 macht J. M. Schaeberle von einem Cometen Mittheilung, der während der Sonnenfinsterniss 1893 April 16 auch photographischen Aufnahmen in der Corona sichtbar gewesen ist. Zuerst ist derselbe von Schaeberle auf den Platten der Expedition, welche die Lick Sternwarte nach Mina Bronces in Chile gesandt hatte, entdeckt worden; später konnte er auch auf den Platten der englischen Expeditionen in Brasilien und Afrika constatirt werden. Die Zwischenzeit zwischen den verschiedenen Aufnahmen hat es ermöglicht, auch die Bewegung des Cometen innerhalb der Zeit von 2' 35" zu bestimmen. Auf den englischen Platten ist der Comet sehr schwach, während er auf den amerikanischen sehr deutlich zu erkennen war. Dies, sowie der Umstand, dass der Comet sich von der Sonne weg bewegt hat, scheint mit Sicherheit darauf hinzudeuten, dass derselbe zu den sonnennahen Cometen gehört, und dass der Durchgang durch das Perihel nicht lange vor der ersten Aufnahme stattgefunden hat. Im Folgenden theilé ich die Positionen nach den Angaben von Schaeberle mit; der zweite und dritte Ort leiden insofern an einiger Unsicherheit, als weder der genaue Beobachtungsort noch die genaue Expositionszeit der englischen Platten bekannt gewesen ist.

Ort	M. Z. Gr.	Distanz v. d. Sonne	Pos.-W.	scheinb. Cometenort α	δ
Mina Bronces, Chile	1h 3m	40.0	199° 45'	1h 38m 20.8	+9° 41'6
Brasilien	2 16	49.4	196 30	1 38 29.5	+9 32.9
Afrika	3 38	61.8	193 30	1 38 46.5	+9 21.4

Wenn ich die Zeiten auf Berlin reducire und die Aberrationsconst, die zu 8".5 angenommen ist, abziehe, erhalte ich:

Ort	M. Z. Berlin 1893	Cometenort 1893.0 α	δ	Cometenort 1893.0 λ	β
Chile	April 16.0752	24° 35'0	+9° 41'5	26° 18'6	−0° 30'18
Brasilien	16.1259	24 37.3	+9 32.8	26 17.5	−0 39.09
Afrika	16.1829	24 40.0	+9 21.3	26 15.9	−0 50.79

Die Sonnenörter werden für die angegebenen Zeiten:

Ort	⊙	log R	X	Y	Z
Chile	26° 44'78	0.00185	+0.89682	+0.41463	+0.17988
Brasilien	26 47.78	0.00188	+0.89644	+0.41535	+0.18019
Afrika	26 51.13	0.00187	+0.89602	+0.41616	+0.18054

Zunächst handelte es sich für mich darum zu untersuchen, ob es möglich ist, die Beobachtungen durch eine Bahn, die mit denjenigen der Cometen 1882 II und 1843 I identisch ist, darzustellen. Unter der Annahme, dass die genannten Cometen zur Zeit der ersten Beobachtung die wahre Anomalie +60° resp. +90° besessen haben, erhält man:

TSE 2001

Pasale Demi and Gernot Meiser are back home

From : "B.A.Tafreshi" <btafreshi@nojum.net> To : <SOLARECLIPSES@AULA.COM> Date : Tue, 29 Jan 2002 23:58:37 +0330

Dear All, Eclipse Chasers Gernot Meiser and Pascale Demi (German and French) has just Complete their one year odyssey trip to Zamiba , for the June 2001 Total solar eclipse.They has reached their home now, in East Germany. They traveled all the way to Zamiba by their big Unimog car and passed many inetersting countries on their way. They will make their documentry film edited and ready to show on German TV , ZDF channel. I accompanied them partly in Zamiba and we obserevd 3' 45" totality in perfect clear sky in northern Kafue national park, in a Lions bush area! Part of their reports are availabe in German at www.african-odyssee.de Kindest Regards Babak A.Tafreshi Editor at Nojum (Iranian Astronomy Magazine) www.nojum.net

From Pascale and Gernot

From : odyssee@mail.intersaar.de Wed, 26 Dec 2001 18:55:05

Seasonal greetings and all the best wishes for 2002! We have now reached Jordan and think to be back home more or less at the beginning of february... we would be happy about any news from you!

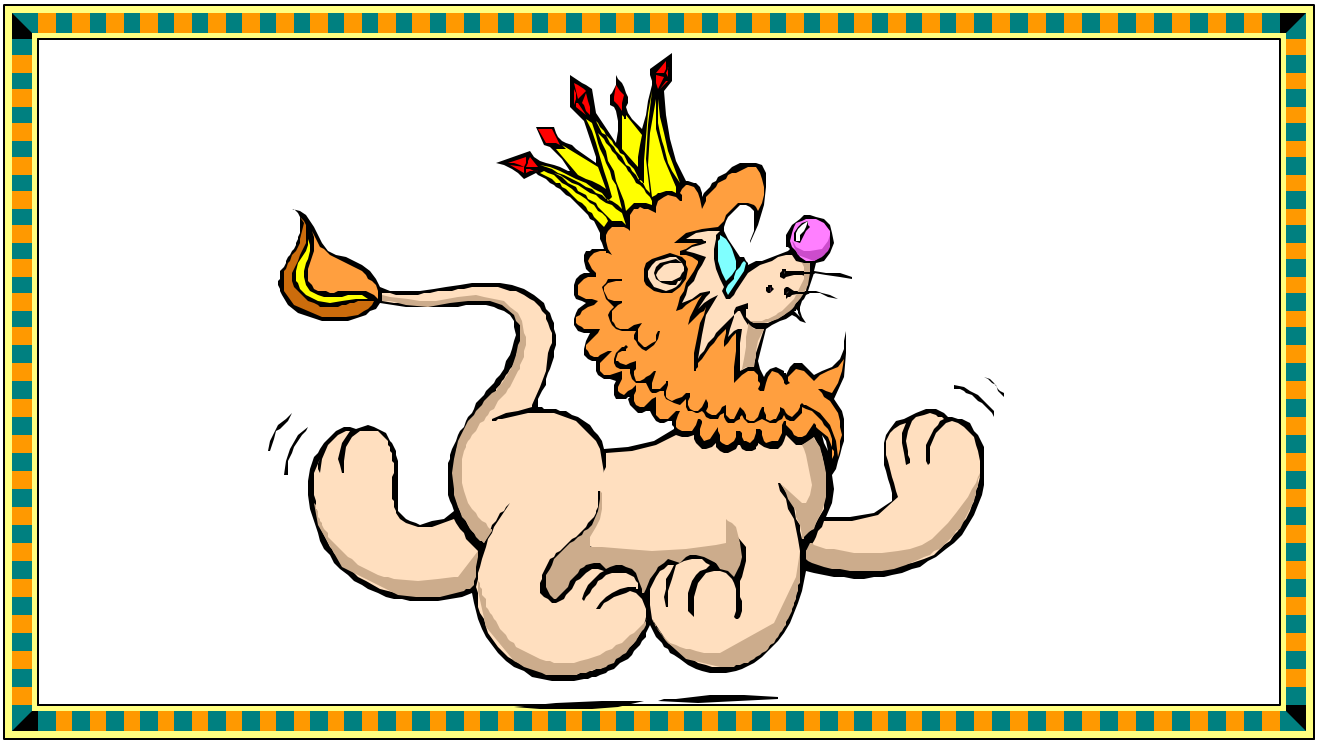
Ganz liebe Gruesse von
Amities
Best regards from Pascale und Gernot

More on past events...

From : Hal Couzens <hal@dneg.com> To : <SOLARECLIPSES@AULA.COM> Date : Wed, 23 Jan 2002 16:05:15 +0000

Hi All, Getting out of date of course but check out http://www.showstudio.com/home/now_showing.html

to see a couple of films involving mine and Warwick Saint's trip to Zambia last June. A very human and local flavour. Enjoy!



ASE 2001

My annular eclipse photos

From : Jay.M.Pasachoff@williams.edu To : SOLARECLIPSES@AULA.COM Date : Wed, 02 Jan 2002 19:26:43 -0500

Vic and Jen Winter have been very nice and have put some of my photos of the eclipse as we saw it (up to 80% coverage) from Ostional, Costa Rica, and surrounding scenes, people, and animals on their Web site at: http://www.icstars.com/HTML/Annular2001/costarica/jpimages.html

Their own coverage is at: http://www.icstars.com/HTML/Annular2001/index2.html

Thanks, Vic and Jen. Jay Pasachoff

Annular Eclipse Photos

From : "Andrew J White" <andrew.white@vanda.demon.co.uk> To : <solareclipses@aula.com> Date : Thu, 3 Jan 2002 23:48:12 -0000

Dear all, A message from our [lucky] friends down the beach at Tamarindo, Costa Rica

Just a quick note to point you at our pictures of the eclipse. Cloud thin enough to see the annular phase without the solar filter!

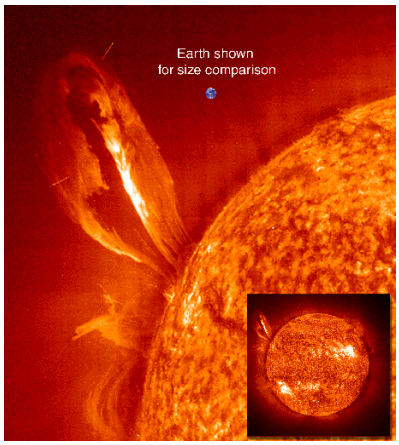
Have a look at: http://www.ast.cam.ac.uk/~ipswich/Observations/Eclipse-2001-12-14/ae141201.htm

Val and Andrew White

Spaceweather eclipse pix

From : "Olivier \"Klipsi\" Staiger" <olivier.staiger@span.ch> To : <SOLARECLIPSES@AULA.COM> Date : Mon, 24 Dec 2001 07:34:21 +0100

howdy all, check out www.spaceweather.com , nice list of images of the solar eclipse. Very nice images of "just" partial eclipse as seen from U.S. These images are proof that a partial eclipse at sunset and/or with some clouds can be very scenic. have a great day ! Klipsi



Another image gallery

From : Daniel Fischer <dfischer@astro.uni-bonn.de> To : SOLARECLIPSES@AULA.COM Date : Mon, 24 Dec 2001 15:33:30 +0100

... with a wild mix of wire photos of the Dec. 14 eclipse (at least one looks like heavily manipulated to me!) has been published in http://www.spiegel.de/wissenschaft/0,1518,173033,00.html - click on any of the 10 small pictures and see more by clicking "WEITER". Daniel

From : "Olivier \"Klipsi\" Staiger" <olivier.staiger@span.ch>

Daniel, which photo do you think looks like manipulated ? I don't see it. They look quite real to me. The sunset eclipse , picture 6, with 2 folks in front, looks real (telelens, focused on sun, foreground out of focus). Wonderful picture with partial eclipse at sunset. and picture 9 (mom and kid looking at sun, wide angle shot) probably simply used one or two f-stops underexposure plus flash fill-in to illuminate foreground. Klipsi

From : Daniel Fischer <dfischer@astro.uni-bonn.de>

http://www.spiegel.de/grossbild/0,1518,PB64-aW1naWQ9MTUyMjU4LWFydGlkPTE3MzAz-My1jaGFubmVsPXdpc3NlbnNjaGFmdA_3_3,00.html -
if the structure at the bottom is the ocean, this picture must be a composite because when the Sun was so low, the crescent was the other way around. If, however, it's just a very straight band of clouds, the picture could be genuine.

From : "Olivier \"Klipsi\" Staiger" <olivier.staiger@span.ch>

ah, I see what you mean. No, to me this looks natural. The low part of the image are just , as you write, bands of clouds, and that is what the eclipse looked about half an hour or so before annularity (slightly overexposed) . There is no point in making a composite image for this view, I think. This illustrates my point: I LOVE some clouds for partial eclipses, as well as for annular. In Costa Rica I was lucky to have no cloud from my point of observation, but I would actually have prefered just a few more small clouds. With the perfect balance of cloud you can take images without filter, and that is a very nice image .

Well, in 6 months we'll have another chance (this time, on the horizon, hoping for no clouds ;-)

(Continued on page 45)

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(Continued from page 44)

by the way, I have exchanged a few e-mails with our eclipse chasing veteran Friedhelm "Freddy" Dorst. He is thinking of going to Saipan or Tinian to observe the June 2002 eclipse. Funny: he'll see it a few hours before us in Puerto Vallarta, even though he'll see it "a day later" - on June 11 (local time) ;-) hehehe best regards, Klipsi

From : "Judy Anderson" <iceclipses@home.com>

Daniel, I was one of the lucky ones who viewed the eclipse with Paul Maley's group and I have to agree with you that this photograph does not look genuine. When the sun was that low and if indeed the ocean is at the bottom, then the crescent is not oriented correctly. It looks strange to me! Judy Anderson Mobile, Alabama

Short video clip of eclipse

From : "Olivier \"Klipsi\" Staiger" <olivier.staiger@span.ch> To : <SOLARECLIPSES@AULA.COM> Date : Tue, 25 Dec 2001 10:18:24 +0100

Ho, ho, ho ! look at what Santa has brought us: a short video clip of what we saw from Punta Leona, Costa Rica. Need Realplayer from www.real.com

see the short eclipse clip at http://eclipse.span.ch/2001ase.rm will probably do more clips asap. Klipsi

From : "Olivier \"Klipsi\" Staiger" <olivier.staiger@span.ch>

More eclipse clips ;-) I've been playing with Pinnacle Studio DV , a great digital video editing software. I am posting video clips of the Costa Rica eclipse (and other eclipses, too, soon) at http://eclipse.span.ch/video.htm

Note: best seen with MS Internet Explorer. Some "inbeded" (MS FrontPage) avi videos may not run with Netscape. Some videos in RealPlayer format, you need a recent version of the player from www.real.com . If the video does not run automatically when clicking on the link, you may have to separately open the player and type the URL in the Player's line. enjoy ! Klipsi

From : Stig Linander <linander@worldonline.dk>

Why using all those PROPRIETARY formats requiring specific versions of specific programs and specific OS-'es on specific platforms?

Why not using an OPEN format like Mpeg that can be seen on ANY platform?

I've been playing with Pinnacle Studio DV too, and if you need advice on how to get the final result in high-quality Mpeg, please ask me directly - not on the list. Best regards and Happy New Year, Stig.

From : "Olivier \"Klipsi\" Staiger" <olivier.staiger@span.ch>

Hi Stig, thanks for the question. And I do reply to the whole list because I believe it is of interest to many eclipse videofilmers, this is actually eclipse related.

The Sun / Moon / Eclipse is round. When I save a video clip as AVI or REAL media clip, or also Windows Media Video, I can choose the size ratio 3:2 , 320x240 , or 160x120 . The result is : the Sun is still round. But , when I want to save it as an MPEG file, the ratio is different ! There is a distortion. Things get elongated. The round Sun suddenly appears longer , like a rugby ball, no more perfectly round.

So, do you, or anybody (Dale ?) know how I can change the size back to 320x240 or 160x120 in MPEG format, to keep the Sun round ? thanks for your help. Klipsi

ASE 2001

From : Stig Linander <linander@worldonline.dk>

> I do reply to the whole list because I believe it is of interest to many eclipse videofilmers, this is actually eclipse related.

My advice: Most Mpeg encoders (that I have tried) produce Mpeg's of bad or awful image quality. On a MS-platform (and I suppose you're on a MS-platform) I recommend using the japanese freeware program TMPGEnc. That encoder gives superior image quality. It can also be used for cutting, slicing and a lot of other tasks. I've been using version Beta 12e found in TMPGEnc-0.11.24.107.zip

>From Studio DV, save your video in the native AVI format, then use TMPGEnc to convert the AVI into Mpeg.

I wanted a video to be shown on a screen - not on the web - so I chose to follow the VCD (VideoCD) standard which defines a 352 x 288 Mpeg1 stream with a quality comparable to VHS. 352/288 is not 4/3, but that doesn't matter when it's played full-screen.

I've found www.vcdhelp.com to be of great help. It's about making VCD, SVCD (SuperVCD) and DVD, but as these formats are just Mpeg's with specific sizes, frame rates and bit rates, many of the advices found there can be used for Mpeg's in general. How to convert between various formats: www.vcdhelp.com/convert.htm How to convert AVI to Mpeg using TMPGEnc: www.vcdhelp.com/tmpgenc.htm

I'm sorry I can't help with your problem of things getting elongated. But give TMPGEnc a try. Good luck! Happy New Year, Stig.

A HIT-AND-MISS ANNULAR ECLIPSE

From : "John Wagoner" <stargate@astromax.com> SKY & TELESCOPE'S NEWS BULLETIN - DECEMBER 21

In many cultures eclipses of the Sun serve as portents of evil or misfortune, but on December 14th the two bodies' juxtaposition brought clouds and rain to Costa Rica, thwarting millions of Central American skywatchers who had hoped to see an annular eclipse. Poor weather doused any chance of seeing the spectacle from the capital city of San Jose, and even some climatologically favored sites were smothered with overcast skies. Two groups of American scientists on the Guanacaste Peninsula, near the eclipse's centerline, settled for fleeting glimpses of the event's partial phases. "The weather was the worst of the week," reports a disappointed Jay M. Pasachoff (Williams College), as heavy clouds formed after sunrise then hung in all day.

A few eclipse-chasers lucked out near the event's southern limit. Paul D. Maley of Houston, Texas, leading the 25th "Ring of Fire Expedition," dodged clouds up and down the coastline until a clearing in the sky appeared near Punta Leona just 20 minutes before maximum eclipse. "This was about as exciting as it can get," Maley says. "It's the first time I've scrambled like that -- and succeeded." In the same general area was another group of eclipse veterans led by Vic and Jen Winter and their Swiss colleague Olivier Staiger. (Staiger's live Webcast of the event temporarily fell victim to an accidental dousing of his videocamera.) A little farther south, on the northern end of Herradura Beach, guests at the Marriott Los Suenos Resort enjoyed a brief clearing at mideclipse despite a torrential downpour just 90 minutes beforehand.

The rest of Central America was largely clouded out as well, but clear skies prevailed over much of Mexico, the southern United States, and northern South America. Floridians had especially memorable views, as the Moon took its 60-percent bite just as the Sun was setting.

ASE 2001

A long story about a 10-day trip to Costa Rica

From : Daniel Fischer <dfischer@astro.uni-bonn.de> To : SOLARECLIP-SES@AULA.COM Date : Thu, 20 Dec 2001

... to (not quite) see the annular eclipse, with many links but no photos (yet), can now be found at http://www.geocities.com/skyreports/costa2001 = http://www.astro.uni-bonn.de/~dfischer/skyreports/costa2001 (the latter site sometimes a bit more up to date). While Winter and Staiger have the pictures, the drama was all mine ... :-)

Regards, Daniel (already fevering for the 2002 and 2005 events) While Winter and Staiger have the pictures, the drama was all mine ... :-) Regards, Daniel (already fevering for the 2002 and 2005 events)

A mixed Costa Rican experience

From : Daniel Fischer <dfischer@astro.uni-bonn.de> To : SOLARECLIP-SES@AULA.COM Date : Thu, 20 Dec 2001 19:29:37 +0100 (MET)

... can be read at http://www.astro.uni-bonn.de/~dfischer/skyreports/costa2001 (mirrored at http://www.geocities.com/skyreports/costa2001 as well): Nice Geminids, a perfect view of the young Moon one day after a certain eclipse ... Daniel

Annular Eclipse video- Puntarenas, Costa Rica

From : Alejandra León-Castellá <leonale@racsa.co.cr> To : SOLARECLIPSES@AULA.COM Date : Mon, 24 Dec 2001 08:50:38 -0600

Greetings! We are updating CIENTEC's Annular Eclipse Tour page with contributions within the country and links to other sites. We have just added a video shot by Erick Castro Alvarado from Puntarenas. This amateur with a Sony Hi8 captured most of the eclipse through clouds. He surely saw more than we did in Nosara but less than Olivier and his group further south.

The original was shot from 15:22 until 17:15. An edited version can be found here. http://cientec.or.cr/astronomia/eclipse/galeria.html#masfotos Hope you enjoy it! Happy Holidays! Alejandra

CIENTEC in Nosara

From : Alejandra León-Castellá <leonale@racsa.co.cr> To : SOLARECLIPSES@AULA.COM Date : Tue, 18 Dec 2001 22:16:29 -0600

Dear friends (now I do know some of you!!) For myself and others in CIENTEC this was a wonderful occasion to meet and share with many of you on your trip through Costa Rica: Olivier, Daniel Fisher and his group, Fred Espenak, Don Higgins and others.

We have worked hard to put together a new web page on our tour, with bilingual texts and links to the reports mentioned in this list. http://cientec.or.cr/astronomia/eclipse/galeria.html We hope you enjoy it.

The clouds stole most of the anxiously awaited show from us, but the satisfaction of the National Campaign and the adventure of following the eclipse, motivated us to enjoy every interaction with national and international visitors and share their preparation and hope, until the very end.

Locals in Nosara said it was the first rain in December in the last 100 years. Oh, well!! Other near by places like Paquera and Liberia where lucky to see more of it. Regios that are always overcast and rainy in December, such as San Carlos, was clear during that afternoon. The worst part is that just a day after the eclipse, the weather had changed back to normal. The skies were clear in the pacific and central regions... Incredible!! But that is the weather.

Now we are thinking about the next eclipse in Mexico and dreaming about a tour that joins archeology and astronomy.

We hope to see some of you again in the future and continue learning from this exciting field.

Last, thank you so much to Fred Espenak and his appreciation of our effort here. We hope to have PDF formats of the inserts distributed nationally through the newspaper -La Nacion- in our web site soon, so any of you can view them (and learn some Spanish too.) Best Regards, Alejandra

ASE 2001

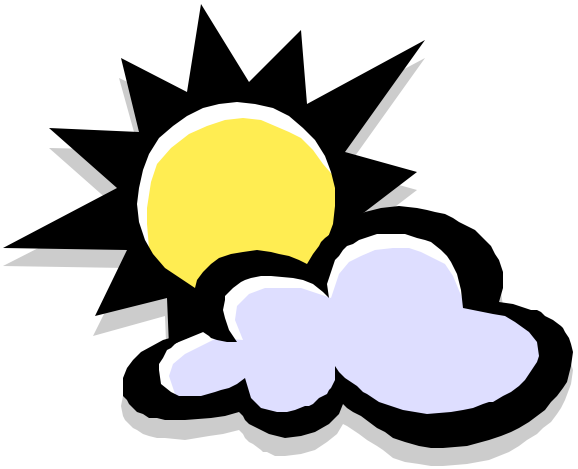
Another failure in Costa Rica

From : "McCann, Stephen" <stephen.mccann@roke.co.uk> To : "'SOLARECLIPSES@AULA.COM'" <SOLARECLIPSES@AULA.COM> Date : Thu, 20 Dec 2001 08:53:14 -0000

<posted on behalf of Val and Andrew White>

Dear all, We were in Tamarindo (up the coast from Nosara) for the eclipse where the sun shone nicely until 15 minutes before "annularity" when a big black cloud appeared exactly where we didn't want it to!

The sun tried hard against this opposition but failed - friends located 800m down the beach were a bit luckier than us as some thin cloud gave them a reasonable view for about a minute or so of mid eclipse.



What pictures we got you can see at: http://www.vanda.demon.co.uk/travel/costa_rica/photos.htm

The temperature, for what its worth, dropped from 30.5C to 27.5C from first contact to mid eclipse (all in the shade). Val and Andrew White

Eclipse Report from Playa Samara,Costa Rica

From : "Jörg Schoppmeyer" <schoppy@kwsoft.de> To : "'Solareclipses (E-mail)" <solareclipses@Aula.com> Date : Fri, 21 Dec 2001 14:58:51 +0100

Hi everybody, in the morning of december 14th, I drove the whole way from Tambor to Playa Samara.It was a really hard way...The weather in Samara was so bad, that I was unable to see even a small part of the eclipse.A day before, I saw the very old moon rising, and a day after the eclipse the sun set in a beautyfull clear sky and 15 minutes later I saw the very young moon. Really frustrating...

I met Olivier (Klipsi) in Amsterdam at the airport, he was one of the lucky ones....

So CU in Puerto Vallarta ! Joerg

New Annular Pix uploaded

From : Vic & Jen Winter <webmaster@icstars.com> CC : SOLARECLIPSES@AULA.COM Date : Tue, 18 Dec 2001 19:55:22 +0000

This bulletin is to update everyone that we have posted new photos of the Annular Eclipse of Dec 14, 2001 to our website. We imaged in both Ha and White light. http://www.icstars.com/HTML/Annular2001/

- See if you can spot my two favorite shots.

*(Yes, we are aware that the white-light sequence photos are stillout-of-order. I forgot to place a "0" before the single-digit numbered files so they do not fall in sequence. I shall strive to resolve this shortly.) Clear Skies,

ASE 2002

Annular eclipse 10 June 2002

From : "Patrick Poitevin" <patrick_poitevin@hotmail.com> To : SOLARECLIPSES@AULA.COM Date : Fri, 04 Jan 2002 06:06:08 +0000

From Jay Anderson: I've put some maps of the track and some weather data for the 10 June 2002 annular eclipse on a small web site I have: http://home.cc.umanitoba.ca/~jander

Please pass the address on to those who might be wanting to go to this eclipse.

From : "Patrick Poitevin" <patrick_poitevin@hotmail.com>

In the webside mentioned earlier Jay Anderson writes: From Indonesia the eclipse track is most accessible from Sulawesi, where it begins at sunrise. Farther northeast the track crosses several islands in the Kepulauan Sangihe and Kepulauan Talaud. These islands must be reached by boat from Manado; the crossing takes 12 hours to reach Tahuna on Sangihe Island and 20 to reach Beo on Talaud. Sangihe has a well-developed infrastructure with good hotels and roads. The capital Tahuna is the hub for travelling around the island and lies a little north of the centre line. Most foreign visitors come for bird watching or diving. Talaud is more remote and less developed but the ferries stop at Beo on Karakelong Island, which also lies just a short distance north of the centre line

From PP: I observed the total solar eclipse of 24 October 1995 from the small island Sangihe Talaud. There are a few planes a week from Manado on Sulawesi to Tahuna on Sangihe Talaud. It is a paradise and indeed there are some small hotels. It was quite rough that time. PP

Happy New Year from Ceduna

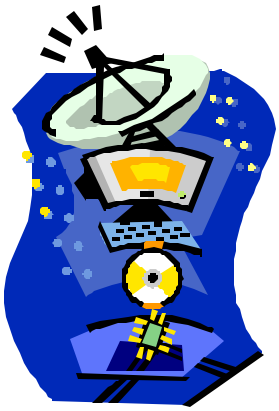
From: "Mick Wolf" <mickwolf@picknowl.com.au> To: <SOLARECLIPSES-owner@AULA.COM> Sent: Monday, December 31, 2001 2:14 PM

Happy and prosperous new year to you all and looking forward to meet you in Ceduna, STH. AUST. MICK.

Puerto Vallarta webcams, radio, TV

From : olivier.staiger@span.ch To : SOLARECLIPSES@AULA.COM Date : Fri, 25 Jan 2002 16:45:07 +0100 (CET)

Puerto Vallarta: I've found 2 webcams from Puerto Vallarta, and a list of links where you can listen to Mexican radio and even watch Mexican TV. I've added links to all these at http://eclipse.span.ch/2002ase.htm . This (radio, TV) is a good way to get familiar with Mexico. And who knows, maybe one of these TV stations will even bring the eclipse live ? Now I have not yet found a radio station specifically from PV. Does anybody know of a website where you can listen to a PV radio ? Klipsi



TSE 2002

Africlipse Website Update

From : "Peter Tiedt" <rigel@stars.co.za> To : "Solar Eclipse Mailing List" <SOLARECLIPSES@AULA.COM> Date : Sun, 23 Dec 2001 21:19:52 +0200

Hi List Just in time for the holidays (and I hope that yours will be happy)

The upload of weather satellite images for the period 10 Nov - 20 Dec on the Africlipse website is complete. Daily images (mostly at 06h00 UT) in the IR, Visible and of Water Vapour spectra are available for view/download.

http://www.eclipse.za.net/html/2002_wx.html

There are also the following new pages:

Annular eclipses of 2010, 2027 and 2030

http://www.eclipse.za.net/html/2010.html

http://www.eclipse.za.net/html/2027_a.html

http://www.eclipse.za.net/html/2030_a.html

Detailed tracks of all African eclipses (Annular and Total) from 1900 - 2100) in 20 year bites.

http://www.eclipse.za.net/html/past_future.html

20th Century

http://www.eclipse.za.net/html/africa_20.html

21st Century

http://www.eclipse.za.net/html/africa_21.html

That should be all for 2001.

The Grande 2002 Eclipse Safari

From : Kidinvs@aol.com To : SOLARECLIPSES@aula.com Date : Tue, 18 Dec 2001 19:30:09 EST

I just wanted to take a moment of your time to wish you a very Happy and Healthy holiday season, and to let you know that the itinerary has been posted for the 2002 Eclipse Safari in Zimbabwe in December 2002. Take a look when you can. Eric Brown

4WD eclipse 4.12.02

From : "Janita V Hill" <janitah@senet.com.au> To : <SOLARECLIPSES@AULA.COM> Date : Sat, 12 Jan 2002 15:20:51 +1030

Eclipse 4.12.02 - South Australia 4 wheel drive camping tour There is a tour which is not yet full. It will be a 4 wheel drive camping tour into the outback of South Australia. Please contact Sandy Pugsley on spugsley@senet.com.au

TSE 2002

Tickalara and Fort Grey

From : "Glenn Schneider @ Home" <gschneider@mac.com> To : SOLARECLIPSES@AULA.COM Date : Tue, 15 Jan 2002 17:26:09 -0700

Can someone confirm if there is an (open) airfield or uncontrolled airstrip at Tickalara, Australia, and importantly what its latitude and longitude may be? The Australian National Mapping Division site does not list an airfield in their meta database: http://www.auslig.gov.au/cgi-bin/gazm01?placename=tickalara&placetype=A&state=QLD

however, one shows up on a "custom" generated map of the area (though coordinates are not provided!). I do not have an ONC of the area so if anyone knows with certainty I would be most grateful to find out about this.

Also, can anyone confirm that there is NOT an airfield/strip in or near Fort Grey? If there is I would like to learn about it.

FYI - I have prepared a few maps of the area that may be of interest to others on SEML: http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_02/E2002_MAPS.html Cheers, Glenn Schneider

From : jdighaye@t-online.de (Jean-Luc L. J. DIGHAYE)

however, one shows up on a "custom" generated map of the area (though coordinates are not provided!). I do not have an ONC of the area so if anyone knows with certainty I would be most grateful to find out about this.

Hi, I have the Tactical Pilotage Chart TPC Q-14D (scale 1:500 000) which does not show any airstrip whatsoever in the vicinity of Tickalara. Also, can anyone confirm that there is NOT an airfield/strip in or near Fort Grey? If there is I would like to learn about it. The same map, however, indicates several "minor aerodrome landmarks - status and serviceability unknown" next to a "natural gas pipeline (underground)". Those closest to Fort Grey have the approximate coordinates: 28°51.1'S; 141°13.7'E and 29°01.1'S; 141°28.8'E

FYI - I have prepared a few maps of the area that may be of interest to others on SEML: http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_02/E2002_MAPS.html

Thanks for these maps! I notice that the totality path is offset by several km to the South compared with the maps by Espenak et al. which, as far as I know, do not take atmospheric refraction into account. Is that sole effect responsible for such a discrepancy or did you use different parameters as to delta T, Earth model and so on? Bye, Jean-Luc

From : Glenn Schneider <gschneider@mac.com>

Interesting. Joe Cali sent me a 250:000:1 topo which does indeed show it:

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_02/TICKALARA_TOPO.gif

upon which I have annotated the path and some local circumstances. What is the vintage (year) of your map?

I haven't compared these to Espanak's yet (but will do so). I think there are likely several factors including:
(a) I have not applied limb profile corrections and use a slightly different value of k then Fred
(b) delta-T may be different (I used +67.0s)
(c) I applied a correction of (+0.50", -0.25") to compensate for the displacement of the mean lunar center of figure w.r.t. the dynamical center of mass ... and, if Fred does see this, a question:
(d) I am not sure we define "sunset" in the same way. Is "sunset" by Fred reckoned with the CENTER of the solar disk on the horizon, or is it with the upper (or lower) limb on the horizon?

Likely there are other differences in detail as well.

One thing, I might request, again if Fred sees this. As the RPs->TPs have evolved into the enormously wonderful works and labors of love which they are (and we all greatly appreciate) the digitally derived maps do not have any Lat/Long fiducials on them. This does make "comparing" such results difficult as the "locations" of towns, cities, etc. as references are rather arbitrary.

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I would love to see future documents in this series include lat/long axes on the periphery and/or fiducial reference grids. Just my 2 cents, not to detract from a stupendous and superlative work. Glenn Schneider

From : "Harvey Wasserman" <onsite@toast.net>

It is not at all surprising that the topo map shows an airfield at 250 000:1, but the TPC map does not at 500 000:1. In general, I would trust the topo to tell me that there was at least once upon a time an landing strip at that location (in 1966, anyways!). I ran into this very problem when trying to find a strip to land at in Zim or Zam last year. I ended up at Landless Corners, having somehow obtained permission from Ron Landless. My hunch is you are up against a similar problem.

The field in question is undoubtedly small, looks to be on a dirt road, and may be a "bush" strip with no services, etc. These sort of strips rarely seem to make it to the larger scale charts.

I started a search of Australian aviation sites, and came up with the following: http://www.airportsaustralia.com/

Unfortunately, neither a listing of airports nor a search of the site revealed the field in question. This may be because it is private, not serviced by a commercial airline, smaller than this site lists (likely), or may not be used.

I would suggest trying to contact someone in the local government with the question, though I had some luck emailing the country's civil aviation department. You might also consider contacting a charter service out of one of the bigger cities and see if they can be hired to fly there, or at least they may be able to provide more info.

I assume that you will be hiring someone to take you in, in which case the charter service is going to be your best bet anyway. They have the small Cessnas that will be needed. Good luck. Let me know if I can help. Harvey Wasserman

From : "Peter Tiedt" <rigel@stars.co.za>

Glenn The web page below has _detailed_ data files for just about anywhere. If you download the two Australia files, I hope you will find the information regarding airstrips. http://164.214.2.59/gns/html/cntry_files.html Clear skies Peter Tiedt

From : "J.P. van de Giessen" <janpieter@giessen.fol.nl>

Hey all, I found the following book: ARID ZONE FIELD ENVIRONMENTAL HANDBOOK (http://www.santos.com.au/environment/data/aridzone.pdf) which talks about a private airstrip in the neighbourhood. Is this something?? Jan Pieter van de Giessen

From : Glenn Schneider <gschneider@mac.com>

Thanks to all who had responded to my initial query. Thanks to a relay from Odille Esmonde-Morgan my question seems, after having gone through many hands, reached the "right" person down under and I received some PDF files with the information sought. I have followed up requesting additional information, some of which might be of interest to others here. When I collect it all I will put it on my server. Cheers, Glenn Schneider

4-Dec eclipse preparations in South Africa

From : "Katherine Low" <klow@skynet.be> To : <SOLARECLIPSES@AULA.COM> Date : Tue, 22 Jan 2002 23:02:41 +0100

Hello all, For those thinking of observing the eclipse in the northern corner of S. Africa, pls be warned that almost all accommodation in the zone of totality is fully booked.

I tried to book already in Kruger park since the middle of last year, but got a nice reply that booking is only possible from 2-Jan-2002 onwards. I sent a mail to the reservation services on 2-Jan-2002 which never got answered. On 4-Jan, I made a phone call and tried to book over the phone. All the placed I asked for in the totality zone including camp sites appeared to be booked already. Well, this raises some questions about the correct application of the booking procedure.

After this experience I tried to book some small scale lodges in the Messina area: all fully booked. One already since 1999! I finally found a camping place in Tshipise, still in the zone of totality near the southern edge, which means I will still have to drive a bit on the early morning of 4-Dec. For people still looking for accommodation in this area,

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there may be other camping places available and I got one answer that free camping in the beautiful Venda land is possible since it is mostly communal land. It did not say anything about safety though.

Some questions for the mail list: did somebody do already a prospection in the Messina area for good observation sites? South of Messina there is the Baobab Reserve which could be a nice setting but totality will be about 9 seconds (more than 11%) shorter there as compared to a position on the central line. On the banks of the Limpopo, east of Messina there appears to be an untarred track on the map from which the central line can be reached. This could offer nice views over the Limpopo river. Finally, the easiest accessible place is just along the R525 to Pafuri Gate and stop on the central line. I have no idea what the surrounding place would look like: are there any views, special features (baobabs), hills, side tracks from the R525 worth exploring, etc.? Thank you for your answers. You can send them to me directly

From Europe to Australia

From : "Olivier \"Klipsi\" Staiger" <olivier.staiger@span.ch> To : <SOLARECLIPSES@AULA.COM> Date : Wed, 23 Jan 2002 20:14:04 +0100

for my European friends who plan to travel to Australia next November, for the total eclipse in early December:

check out Malaysia Airlines, they have a very nice fare, Sfr. 1680.--, from Zurich Switzerland to Adelaide, roundtrip. that is about 1000 US$. Not bad...

probably other destinations (London, Frankfurt ?) may have very good rates with Malaysia Airlines, too ? And: Malaysia Airlines is affiliated to KLM's Flying Dutchman program ; -)

TSE 2002 Australia Circumstances @ 1 Second Time Resolution

From : "Glenn Schneider @ Home" <gschneider@mac.com> To : SOLARECLIPSES@AULA.COM Date : Sat, 26 Jan 2002 01:37:24 -0700

For those who are interested, I have placed two tables on: http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_02/ECLIPSE_2002.html

which give the centerline circumstances and contact timings of the 2002 TSE over the entire path in Australia with a granularity of 1 second. You will find this at the bottom of the section entitled TOPOGRAPHIC MAPS.

Dec. 4, 2002 outback South Australia

From : "Janita V Hill" <janitah@senet.com.au> To : <SOLARECLIPSES@AULA.COM> Date : Thu, 24 Jan 2002 09:55:54 +1030

There has been some chat recently about outback 'towns' in South Australia. (Wirraminna, Tickalara, Woomera, Fort Grey etc)

I forward these comments of Fraser Farrell's to help sort out a few details. I am sure Fraser will kindly elaborate on any details if you wish to contact him directly. fraser@trilobytes.com.au cheers, Janita Hill South Australia janitah@senet.com.au

Janita, After reading all those comments from overseas folk, I think that we need to emphasise that nearly all the locations mentioned are -not- towns and therefore have no visitor facilities. People from Europe & N America are accustomed to seeing a village or hamlet every few km on their maps. Australian mapping philosophy is a bit different. Especially in outback areas, where almost any significant artificial construction gets a geographic name put on it.

Many of the locations along the railway line, for example, simply indicate where the line is doubled so that trains can pass each other. Some of the locations on the Stuart Highway are only repeater stations for the Adelaide-Darwin fibre optic cable.

Someone mentioned Tickalara. This was just a sheep station homestead when I was last in the region (~15 years ago); and a dirt airstrip is a standard feature of any Outback sheep/cattle station. But don't count on being able to land your plane on any of those airstrips. They are private property after all.

And if you try, as one correspondent has noted, an undercarriage that can't flick rocks into your props is recommended. I would also add that your plane needs to be fairly tolerant of potholes, sand drifts and crosswinds during a takeoff/landing, and have a short runway requirement. And if it rains while you're there, don't expect to be able to take off again for a few days...I've seen Cessnas rip their wheel struts off when trying to fly off a glutinous mud strip...

Places of interest which have sealed runways and refuelling facilities include Ceduna, Leigh Creek, Roxby Downs, and Woomera. All of these are serviced by scheduled flights using medium-sized planes - and the Woomera airstrip has received many visits from Galaxys, StarLifters and other huge cargo planes.

In addition Arkaroola, Glendambo, Marree and Andamooka all had well maintained dirt airstrips last time I visited them.

Other places that could be considered towns (in the visitor facilities sense) include Lyndhurst, Hawker, Pimba and Tarcoola. Most of the other places shown on Fred Espenak's maps are sheep or cattle station homesteads. Also note that Fred's map does -not- show the new-ish town of Roxby Downs, which is about 30km west of Andamooka. The "Roxby Downs" shown is in fact the much older sheep station of that name.

The Commonwealth Prohibited Area immediately northwest of Woomera doesn't contain atomic bomb fallout (the test sites are several hundred km west). But some more distant areas -were- heavily used for weapons testing, and therefore may contain unexploded bombs/shells/missiles as well as nasty residues from chemical warfare and explosives.

However I also note that when I lived in Woomera as a kid it was common practice to go camping, motorbike riding, dirt rally driving etc to the northwest of the town. This area was slightly more scenic than the stony wastes south of the town.

The military authorities tolerated these recreations, provided that you stayed on/near the (dirt) roads, or in the vicinity of some small salt lakes near Koolymilka. The areas that you definitely had to Stay Away From were well known to Woomera people; and usually guarded by military personnel.

I note that the path of totality passes right over Koolymilka; which I remember as a tiny place with a few Quonset huts, radar dishes, and various antennae. Probably nothing left of it nowadays except concrete foundation slabs, but I suspect that many of my favourite trailbike & camping spots in the area are little changed. They are far enough out of town that the lights of Woomera and its notorious new immigrant detention centre would not be a problem for astronomy. As for the eclipse itself, just pick a spot on the east shore of one of the lakes...

I'm seriously considering a reconnaissance trip to check some sites out more thoroughly and to refresh my memory. After the heat of summer has receded a bit! cheers, Fraser fraser@trilobytes.com.au
Fraser's web site: http://www.trilobytes.com.au Astronomical Society of South Australia's website http://www.assa.org.au/

From : "Janita V Hill" <janitah@senet.com.au>

(re: South Australian outback places. Wirraminna, Tickalara) Another local chap sent this warning:

"I have been up there over the years on quite a few occasions. Fraser is correct. Most of those 'towns' are old stations that are now no longer there. There may be a monument or old shed (in a rusted heap) if you are lucky. It sounds like these guys have no concept of the conditions. Remember the German tourists a few years ago who perished just out of William Creek? I think we should not be giving advice on remote outback travel. We should direct them to the Police to check conditions. That is all. I would not want to be responsible for any deaths."

The Austrian lady mentioned above unwittingly broke golden rules of outback travel. She tried to walk back to the William

Creek town from Lake Eyre (dry salt), in Australian summer heat and without water. She died of heat exhaustion and dehydration at about 25 kms from the vehicle. When the police got to the vehicle, it had 40 litres of water on board. It only took the police 10 minutes to unbog from the sand. The Austrians had been stranded there alone for a week because they didn't know basic outback vehicle techniques. Not stupid folk, just inexperienced. (Her fiance decided to stay with the vehicle fortunately, and survived). The people who found her body were also overseas tourists. No locals travel ever around in these areas during summer for fun. Be warned then. Outback travel sounds like a lark but my friend who made the comments above is right, even in this day and age. cheers, Janita Hill

From : Evan Zucker <ez@AbacusTotality.com>

At 05:50 PM 1/23/2002, Janita wrote: No locals travel ever around in these areas during summer for fun.

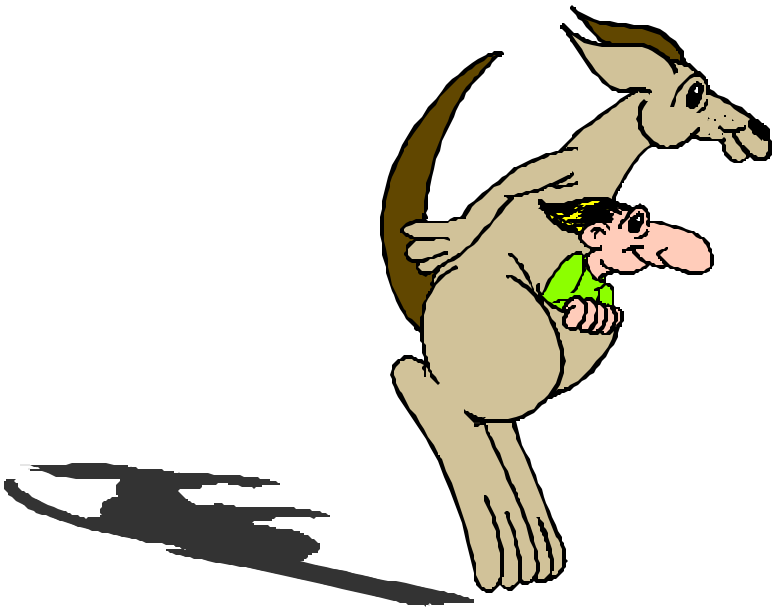
Just like hardly any Americans go to Death Valley in the summer, but for Europeans (and maybe Aussies) it appears to be a right of passage for them to brag about back home.

Of course, Death Valley and even the Mojave Desert are a LOT smaller than the Outback.

From : rigolett@herring.seagull.net (EG)

>There has been some chat recently about outback 'towns' in South Australia. >(Wirraminna, Tickalara, Woomera, Fort Grey etc)

I can't talk about the others, but Woomera is definitely in the Outback. It used to be a missile test range. I was there in the 80s or so. Strictly a Company Town, but quite nice. It was partly run by the ELDO (European Launch Development[?] Organisation.



Talk about clear skies!!!!! The Milky Way and Southern cross were an absolute delight. (Though all the other constellations were upside down.)

I also remember the jade mines near Andamooka.

Lovely, desolate place.

I'm sure it's in a restricted area.

It made the news recently, being where they sent a group of refugees [?] trying to get into Australia. The refugees didn't much care for the place, and thought they'd help their cause along by burning their building down. It probably didn't help.

If the other places are anything like Woomera, don't count on much being there. A small town near Woomera (name forgotten) consisted of one (maybe 2) buildings.

Anyone who hasn't been to the Outback really ought to dig into some National Geographics, or talk to someone who has. Somewhat to the west of New South Wales (where Woomera is, and Adelaide (now There's a really nice city) is a place called the Nullarbor Plain (that's Latin for "no trees here, mate"). There's a railroad that goes for east-west for 1000 miles, in a straight line, and there's not much scenery above ground level. In the Summer (our winter), it's pretty dreadful. Mike Zorn, Santa Ana

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Highway at Wirraminna and Woomera

From : "Chris Malicki" <kmalicki@idirect.com> To : <SOLARECLIPSES@AULA.COM> Date : Sat, 19 Jan 2002 17:32:35 -0800

I have read with great interest about Glen Schneider's plans for observing the eclipse at the extreme sunset point. I plan to drive from Port Augusta on eclipse day, most likely to the centre line near Wirraminna. I am greatful for Fred's predictions and to Glen for his road map of the Stuart highway. However, I wonder if there is a larger scale map of the stretch of road between Woomera and Coondambo. I have read Joe Cali's description about this road. I need to know the practicality of parking for a number of hours on the roadside at the centreline. Are there shoulders to park on? What is the "town" of Wirraminna like? Facilities? How do I know when I'm close to the centreline. (Maybe that's where hordes of other vehicles will be?) Perhaps Joe Cali, or Odille Esmonde-Morgan or Glen can answer these questions, or direct me to a large scale map of this stretch and of the Purple Downs/Roxby Downs area. Any information to me privately or to the SE list would be appreciated. Thanking you Chris Malicki http://webhome.idirect.com/~kmalicki

From : "Glenn Schneider @ Home" <gschneider@mac.com>

Chris, My understanding is that there is a caravan park at the Wirraminna Homestead Tourist Centre. I do not have an email or URL for them, but their phone number in Australia is: Tel:+61 8 8673 7275

I'm sure a call to them would answer your questions.

For others on SEML this came from a list of caravan parks in South Australia, which may be of interest to others who are making (or soon will make) plans: http://www.holidayoz.com.au/sacp.htm

Others who may be considering a trip to Wirraminna by train might want to read: http://www.usatoday.com/life/travel/lt281.htm -GS-

From : Jeanne Loring <jloring@arcgen.com>

I've been working on a triend from Adelaide to get him interested in the Dec 4 eclipse. I forwarded two messages from you guys: Highway at Wirraminna and Woomera (Dec. 4, 2002)] and Tickalara and Fort Grey (04 Dec 2002, and asked him to comment. I think you might enjoy his responses, and perhaps even find them useful.

From: JSmeaton@bresagen.com.au

Quite amusing asking if there is a shoulder on the Stuart Hwy. There is for about a thousand miles on each side! Actually in that area most of it is fenced to keep stray cattle off the road. Despite that there are plenty of carcasses along the road and some very well fed wedge tail eagles around. The town referred to probably has a couple of trailers and a windmill. Might even have a sign so you know you passed by. The Stuart Hwy is a good 2 lane blacktop. Just about any other road North of Pt Augusta in that area is dirt and the condition depends upon the season. Good after rain and grader. Impassable after rain then rutted 4 wheel drive track until graded.

Maps should be available from the SA Govt Tourist Bureau or possibly from Western Mining Corp. who operate the Roxby Downs mine.

I'd go to Ceduna at that time of year if that fits the centerline requirement. Course it may be like this current summer and be bloody cold until Mid January. Never can tell.

Best way to know where you are out there is to have a portable GPS. Anyone contemplating going off road to get on the centerline needs to be properly prepared for extreme heat. This means lots of water. Ideally a VHS radio. A large jack-known as a German Jack they are about 4ft high and facilitate lifting a vehicle out of sand or mud without having to get under the vehicle which will probably be sitting on its chassis. Reserve fuel and a come along is also a good idea. A diesel is much the better choice of 4WD (Toyota Landcruiser or Nissan Patrol) as they have better range and more low down torque for pulling through sand etc. Also need to advise police of intended route and expected time of return-good idea to check in upon return too or they get a bit

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ticked off. Think of Death Valley in July with dirt road and no one around to help if in trouble. If lost or stuck the absolute rule is stay with vehicle and await rescue. Burning tires provide a good beacon for air search and a signalling mirror is a good thing. Talking of tires it is a good idea to carry 2 spares and the means to fix flats. Blowing the spares up to high pressure provides a source of air to reinflate a tire partially deflated for sand traction. Don't forget the connecting tube!

Having done all this you will find your selected spot easily accessible from the road by Honda Cvic, never get stuck and have no flat tires and wonder why you dragged 40gal of water and 20gal of extra fuel along as you glide up to the local pump with half a tank left after your expedition. Actually this is better than being discovered as a mummified body sticking out from under a rusted Toyota by a Martian visiting in 2755! Cheers, You are getting me interested in the eclipse thing. John

From: JSmeaton@bresagen.com.au

The civil aviation folk in Australia should know about the airstrip. If there is one it will be private and probably near a station homestead. People out there rely on the flying doctor for medical stuff and most homesteads have airstrips. Invariably dirt but most FD aircraft are twin engine Beech King Airs so the strips will take most light planes that are tractor powered. Pushers tend to chuck rocks up from the wheels into the prop. The Royal Flying Doctor service is also likely to be a good source of air strip info. I would also think the world wide Jeppesen data base on air strips would have the info. Why not just see the eclipse from about 8000ft in cooler air while sipping a good red and forget the landing strip?

The other feature I have not mentioned is flies. They are industrial strngth out there. Your back will be covered in them and a quorum will fly around your face constantly leading to constant hand waving for exercise. They disappear when the sun goes down. Cheers John

From : "Chris Malicki" <kmalicki@idirect.com>

Thank you for the message. It's very helpful. The point about a shoulder on the highway is relevant, because I certainly don't wish to stop on the asphalt and get hit by a vehicle during totality. I certainly know many paved roads that have sandy, rocky etc. shoulders that are impossible to drive onto. I plan to be in a van with 4 other people and we do not have a lot of leeway driving into the desert, over rocks etc. I just needed to know that I can SAFELY stop by the side of the road for hours. No need to drive far away from the Stuart hwy. because the centre line crosses the road. Chris Malicki

From : "Joseph Cali" <joe_cali@hotmail.com>

There is plenty of space to park off the road and a few small dirt tracks/roads where you could get 50 or 100 metres off the highway or 20km for that matter. A cheap blue poly tarp & some rope would be a good idea for some portable shade if you cannot find a shady tree on the day. You wouldn't want to spend a whole day out without shade This would only cost a few dollars. Bring lot's of water 6-7 litres(2 gals) per day per person in case it is really hot.

For those contemplating hiring a 4wd and heading off road, I've written an article on my web page entitled "4wd techniques for desert driving" It is the readers digest manual for the most common difficulties found in desert driving. Follow the eclipse links to the Australia 2002 page and the article has a link off that page.

http://joecali.members.easyspace.com

As for Wirramina. I passed through there in October 2000 whiloe on a field trip. My collegue was driving at the time and I may have dozed off for a few minutes and missed it or its possible that it was just so small that I didn't notice it. I know that sounds slack but we'd covered 4000 km in five days. All the little sidings and road houses become on e big blur. When we reached Lake Hart, I realised I'd missed Wirramina.

It is a railway siding for cross continent freight trains. There might be a gas station with a basic shop and the caravan park but don't count on much more. It is certainly not a town. Most of the names on the digital maps are farms not towns. Don't expect

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much in the way of facilities. The lake Hart picnic area is very obvious on the highway. That is on the southern limit. Those without GPS can just drive 20km past lake Hart and be confident of being very close to the centre line. Glenn and I are working on producing some 250000 scale topo maps. At present, we've only produced them for our destination at the Sturt NP. I am the bottleneck in the process not Glenn. Eventually, these will cover the five key observing locations. Glenn & I will try to make them available over the net over the coming weeks/months.

The road is sealed from the hwy through Woomera all the way to Roxby Downs. You can stop on the side of the road but you are not allowed to drive off the highway. It's a 1950's A-BOMB atmospheric test site & a restricted travel zone. You will however be allowed to drive off the Roxby Downs road to view the total eclipse that will pass over this area in about 250 000 years time. :-(Regards Joe Cali

From : "Chris Malicki" <kmalicki@idirect.com>

Again, Thank you very much to Glen Schneider, Joe Cali and Janita Hill for your very helpful suggestions. I definitely plan to be on the Stuart Highway near Wirraminna on Dec. 4. Maybe I will see some of you there or other members of the SE list. I already have booked accomodations in Port Augusta on Dec. 3 and 4 and would be happy to meet other eclipse enthusiasts thereabouts, on the 3rd, 4th. Chris Malicki

"Carrying us away, Oh ever more away, Time" (1967) http://webhome.idirect.com/~kmalicki

From : "Joel M. Moskowitz, M.D." <moskowi@attglobal.net>

Hi Chris, I'm going to be with Glenn, Joe Cali and Michael Gill. It would be great to run into you again.

From : "Odille Esmonde-Morgan" <analog6@ozemail.com.au>

Dear Chris I will be purchasing some topographical maps of SA soon. I am not sure if the scale available will be 1:100,00 or (hopefully) 1:50,00. I will be putting some scans on my website as soon as they are up (2-3 weeks) and will notify the group when they are viewable.

From : "Odille Esmonde-Morgan" <analog6@ozemail.com.au>

I'd have to say he is spot on, but puts it with a good bit of humour! Lots of preparation, water, sunscreen, long-sleeved shirts and a BIG hat for all of you planning to visit outback SA. WE don't want the eclipse to be (in)famous for the number of badly affected tourists! Cheers

Topographic Charts, Info and Plans for 04 Dec 2002 "Sunset" Total

From : "Glenn Schneider @ Home" <gschneider@mac.com> To : SOLA RECLIPSES@AULA.COM Date : Thu, 24 Jan 2002 00:08:33 -0700

Given the recent spate of postings regarding logistics, concerns, and needs for observing the 2002 TSE in Australia, I thought I would make available some additional thoughts, and more tangible information which may be of use to some. A while back I noted here, as odd as it may seem, that I would likely elect to view the 2002 TSE from near the sunset point. That is now definitive and Michael Gill, Joel Moskowitz and Joe Cali will join me. I am most grateful to Joe (not to slight my other very capable and inventive cohorts) for his insights - some of which he has shared here as well - given his familiarity with the outback.

I will be brief here ans simply point you to: http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_02/ECLIPSE_2002.html

I hope some will find portions of this useful, particularly given the dire warnings along the line of "if you come and slip up you will dry up and die, if you don't get eaten by the flies first." Actually, the advice from Janita Hill and others SHOULD be taken seriously (I did not mean to make light of that). We do get our fare share of dead people in the desert around Tucson every year. Living here I have gained an appreciation for what dehydration can do - but I won't let "familiarity" make me cocky. I am very glad for the comments by the locals down-under. For example "town" is indeed a misnomer in many (most) cases, as examination of the above linked topographic maps will reinforce. I found Janita's comments regarding dubious airstrips particularly use-

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ful and will integrate this into our plans. I would like to ask her to further look at the list I prepared above and offer any additional specific comments. While I had received back info on Ft. Grey airstrip (in particular), I'm awaiting replies on some others. Hope to see some of you down under... Cheers, Glenn Schneider

4-Dec-2002 eclipse in S. Africa

From : "Katherine Low" <klow@skynet.be> To : <SOLARECLIPSES@AULA.COM> Date : Tue, 29 Jan 2002 22:26:25 +0100

Hi All, When browsing a bit on the web I found the interesting web site of 'WildNet Africa' with plenty of information on wildlife in Africa: http://wildnetafrica.com/africa/africa.html and http://wildnetafrica.org

I found there some eclipse related articles.

First an article that appeared today 29-Jan (See 'latest news'). This may be removed tomorrow from under this heading, but the direct link is: http://wildnetafrica.com/wildlifenews/2002/01/2063.html The title is 'SANParks apologises for eclipse booking fiasco (January 29, 2002).' This corresponds indeed with my earlier described 'booking experience' in the Kruger Nat. Park.

The last paragraph of the article says: 'To make accommodation available for eclipse watchers, SANParks has embarked on what Msimang termed an "urgent project" to erect temporary camping facilities and allow visitors to exit vehicles so as to view the eclipse better, the newspaper reports.

The second article is about a work shop to be held on the total solar eclipse later this month (actually 30-Jan). By concidence this work shop will be held in the place where I finally booked for the eclipse, at Tshipise! Direct link see: http://wildafrica.net/latest/messages/428.html

And now I hope that all the included links still work. Cheers, Kris

Weather in southern Africa

From : "K. Wiersema" <kwrsema@science.uva.nl> To : <SOLARECLIPSES@AULA.COM> Date : Wed, 30 Jan 2002 14:25:35 +0100 (MET)

Hello everyone. We (Klaas Wiersema and Patrick Weltevrede) are currently planning a trip to our third TSE, 4 dec. 2002.

We are thinking about going to the Caprivi-strip for this eclipse, because of the national parks and game reserves there. We have read that (expected) weather conditions in South-Africa (Beitbridge, Messina) are better than the weather conditions in Namibia and Botswana. We've looked at table 20 from Espenaks site at: http://sunearth.gsfc.nasa.gov/eclipse/TSE2002/TSE2002tab/TP2002-Tab20.gif

In this table we find that the "percent of possible sunshine" statistics for namibia are better than for South-Africa. Our question is: what are the reasons for preferring South-Africa? Our second question: is anyone else planning to go see the eclipse in a country other than South-Africa (or Australia)?

Our apologies for our sloppy english, Klaas & Patrick Astronomical Institute "Anton Pannekoek" Amsterdam

From : "Barrie W. Jones" <b.w.jones@open.ac.uk>

I am going to Botswana for the 4 December eclipse. There will be 8 of us in two Land Rovers. I hear that the Caprivi Strip

(Namibia) might be unsafe because of military action in Angola. I believe that north-east Botswana might have slightly inferior weather statistics to Kruger, but not by much. Barrie W Jones

From : "Crocker, Tony (FSA)" <Tony.Crocker@transamerica.com>

http://www.supertravelnet.com/welcome.cgi?country=220_5007_7&systeemi=3 shows the location of 3 of the 4 Namibian towns on Fred's list. They are considerably west of the Caprivi eclipse path, which is at the extreme NE corner of the map. The 4th town is near Walvis Bay, even farther away.

From : Assoc Prof J R Huddle <huddle@usna.edu>

An important bit of info that is not revealed in the weather statistics table is that in the Beitbridge-Plumtree-Bulawayo area of Zimbabwe, at that time of year, the clouds and rain usually occur in the afternoons. While in Zim last summer, I spoke with some people who live near Plumtree. They expect that the skies will be clear at eclipse time, but will get cloudier as the day progresses. Francis: Can you confirm or deny this rumor? And what of the unrest and the plight of the farmers? Has that settled down any? Would it be an impediment to traveling in Zim? Jim Huddle

From : Shivapuja@aol.com

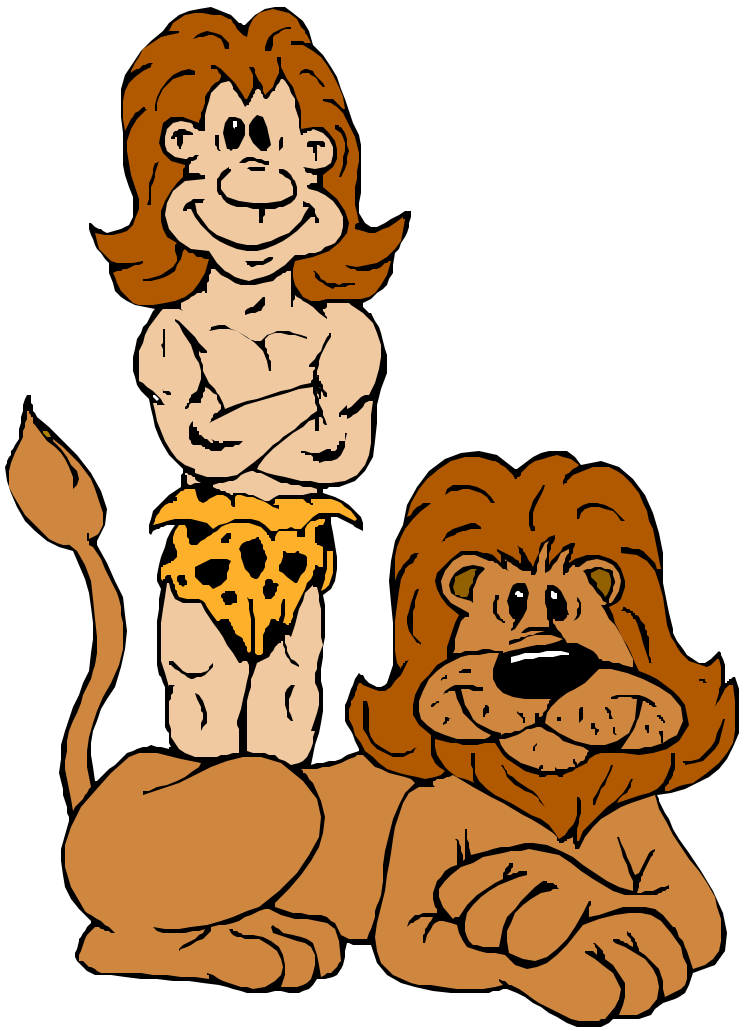
one reason some, such as this u.s. citizen. would avoid the strip is political. i am viewing from a cruise ship off the mozambican coast.

From : "Peter Tiedt" <rigel@stars.co.za>

Barrie Apart from Angola, any of the countries should be OK.

I was recently in the Caprivi and there were no problems in the Katima (eastern) area. Stay away from the Zambezi Motel in Katima Mulilo - not to be recommended.

Need any other info, just yell. Peter Tiedt rigel@stars.co.za Visit my website at http://www.eclipse.za.net



TSE 2003

2003 Antarctica TSE - first time ?

From : "Olivier \"Klipsi\" Staiger" <olivier.staiger@span.ch> To : <SOLARECLIPSES@AULA.COM> Date : Mon, 7 Jan 2002 20:22:11 +0100

dear friends, I was wondering... if the total solar eclipse 2003 is successfully observed by someone in Antarctica, will it be a historic first ?

In other words: has a total eclipse ever been observed from Antarctica before ? Total solar eclipses have occured before on Antarctica, allright, but has any of those been observed at all ? Is there any report of such observation by any expedition ? Or have they gone unobserved ? Klipsi

TSE 2003 Contact times/altitudes

From : Glenn Schneider <gschneider@mac.com> To : SOLARECLIPSES@AULA.COM Date : Wed, 30 Jan 2002 13:13:52 -0700

I have been looking with some interest at the local circumstances for points along the path of totality (on centerline) for the 23 November 2003 TSE. While obvious in retrospect (particularly to those old foggies like me who have been poking at eclipses for some time), I came across an amusing "quirk" (actually, natural consequence) for some topocentric locations due to the geometry of that eclipse.

For points near the "sunset" end of the path the angular elevation (altitude) of the Sun above the horizon is greater (higher) at 4th contact than at 1st contact. And, in fact can be lower at totality than during BOTH contacts I and IV. Huh? No, it has nothing to do with atmospheric refraction, simply that the path traverses through latitudes where the sun does not set. Simply, and of course, the lower part of the Sun's diurnal circle is both sunset and sunrise.

Take for example centerline at 23:15 UT - close to sunset (72d 07'S, 16d 50'E). Here, at 1st contact (22h26m) the sun is 2.55 degrees up with the Sun moving nearly parallel to the local horizon. Twelve and a half minutes later (22h39m UT) it is at its lowest point, 2.53 degrees above the horizon (I did say nearly parallel) during the ingress phase of the partial eclipse. At mid-eclipse (23:15UT), the Sun is back up to a whopping 2.74 degrees, and bu contact IV (00h04 on the next UT day) it has risen all the way to 3.66 degrees.

One of the most interesting places to watch this eclipse might be at: Lat=14d 55' 06."E, -69d 33' 52S, right off the Antarctic coast. Here, the Sun traverses essentially horizontally along the horizon from first contact (22h27m) to the end of totality (23h16m). Without considering atmospheric refraction, right at first contact the Sun is sitting "half up" - bifurcated by the horizon. The moon, which is rising, however, makes contact at that location at a PA on the limb just below the horizon. When you allow for atmospheric refraction, you would see first contact, however, (and maybe a green flash to boot). Come to think of it you may see MANY green flashes during the partial phases of the eclipse. During totality the sun and moon will stand with their bottoms nipped off by the horizon. By last contact at 00:03UT the Sun will be a full degree above the horizon.

Sunrise/Sunset points occur for all eclipses (though for some only sun rises or sets). And, in the Arctic and Antarctic regions the Sun does slowly work its way to/from the horizon (traversing it in more than a day at the poles). It IS unusual to have an eclipse where the Sun moves (essentially) only in azimuth as it hugs the horizon.

Having said all this, would *I* want to be there? NO WAY! I may be crazy enough to opt for a sunset eclipse in 2002: http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_02/ECLIPSE_2002.html but I am not that crazy! I'll take TSE 2003 from further upstream. -GS-

P.S. I have just placed an UMBRAPHILE datable for TSE 2003 on my server at: http://balder.prohosting.com/stouch/UMBRAPHILE.html It's not currently bundled with the S/W, but you can download it there.

From : "Patrick Poitevin" <patrick_poitevin@hotmail.com>

In 1993, for a partial eclipse, i calculated a point where I could watch the partial phase just at it highest position, just above the horizon. Unfortunately, the Antarctica station mentioned to me that a that location a big mountain was in the way. Make sure you are not watching mountains instead of the (eclipsed) sun... PP

Win a trip to Antarctica 2003 !

From : "Olivier \"Klipsi\" Staiger" <olivier.staiger@span.ch> To : <SOLARECLIPSES@AULA.COM> Date : Wed, 30 Jan 2002 22:16:21 +0100

I was wondering whether this idea had any chance to develop into something real:

suppose we are over 200 members on this list, right ? How many of us would want to go to Antarctica to see the TSE 2003 , if we had the money to travel to Antarctica? Most of us, I presume. How many will actually go ? Just a few, I'm afraid. The trip is very costly. Too expensive for most of us. Now, how about this: We have a one-month cruise with icebreaker ship to travel to totality. The cheapest cabin (triple share) is 18'995 $. So, divide 18'995$ by 200 folks. Result: 95 $ per person. So ? If we had a lottery, a draw, (for example at next Solar Eclipse Conference, Patrick?) to offer that trip, and a ticket would cost 95$, and your chance to win would be 1:200 .... would you buy a ticket ? Just a thought... ;-) Klipsi

From : "Jean-Paul GODARD" <jean-paul.godard@noos.fr>

Two points... perhaps important

1- next eclipse conference must be held in a country where this kind of lottery is legal and not taxed....too much
2- Most of us are married with anoter eclipse chaser... and therefore want to win two tickets...

So the price must be around 200 $ would you buy a ticket ? Probably YES... good Idea!!

From : Shivapuja@aol.com

pretty good odds; i'd consider it.

From : "Crocker, Tony (FSA)" <Tony.Crocker@transamerica.com>

Perhaps for the same price you could auction a few plane tickets. That way the winner(s) will actually get to see totality instead of the likely clouds.

From : "Odille Esmonde-Morgan" <analog6@ozemail.com.au>

It's a great idea. Most lotteries/raffles are oversubscribed - you could probably sell, say 300 tickets, which reduces the ticket price but does not reduce the odds too much. Is the stated price for the triple share cabin as a whole, or each of the three folks in the cabin? You might need to raffle TWO tickets if most folks would want to have their spouse along. Think it over carefully, remembering that you nomally have to buy the prize (ticket(s)) first in order for it to be legal. The best way to do it, if it could be managed legally, would be to hold the raffle, and, if sufficient funds are raised, buy the prize, with guaranteed refunds if income did not meet expectations. I don't know if this can be done anywhere, though. Cheers

From : Evan Zucker <ez@AbacusTotality.com>

I have to assume you mean that the entire cabin for 3 people is $18,995; $56,985 sounds a bit high. So 3 people could win, and the odds are 3:200, or 1.5%.

TSE 2003

I don't think it would have to be done as a lottery. Since the TSE has a known finite membership, this could be done as a contract with multiple parties, with the contracting parties agreeing that only 3 of their members, randomly selected, will go. Of course, that would depend upon the laws in the governing jurisdiction. Evan H. Zucker A non-practicing California attorney

From : jdighaye@t-online.de (Jean-Luc L. J. DIGHAYE)

1. Alas, the price Klipsi quoted is for a single person in a triple cabin! 2. The idea of a lottery (raffles, contract...) is funny, but for myself I don't like it too much because of legal problems, possible taxes, the necessity to buy the ticket first etc..

3. I have seriously considered to book a place aboard the icebreaker. Positive aspects: it's a *great* adventure and you can land on terra firma (or at least the ice pack?). Negative aspects: not only it costs a lot but also you have to spend 4 weeks on rough seas with a majority of rich, retired people having questionable interest in eclipses and astronomy. Also, clear weather probability is not high.

4. The prize or the booking should perhaps be on a cabin basis not on a person basis. I'm single, if I find another two highly motivated people (married or not) I might reconsider my rather negative opinion above and try to share a cabin.

5. As far as value for money is concerned, however, I'd prefer a flight over the eclipse path. I contacted Croydon Travel (but they didn't react) and I had a chat with Glenn Schneider about that. If things move, it would probably be the way I'll see the Antarctic eclipse. Jean-Luc

From : "76630,2206" <76630.2206@compuserve.com>

Klipsi: 23 November 2003 is our eighth wedding anniversary. If I win, I would bring my wife. It will still cost me 19 grand.

Also, does the weather on the ground look THAT good for this one??

I am not too keen on this plan. cheers/Robert B Slobins

From : "Patrick Poitevin" <patrick_poitevin@hotmail.com>

1. Next Totality Day (TD2003) is 8 february 2003 in the Open University of Milton Keynes England

2. Next International Solar Eclipse Conference (SEC2004) is the weekend of 20-21-22 August 2004 in the Open University of Milton Keynes England

3. Webpages will be soon available for 1 and 2

4. Indeed we have over 310 SEML subscribers

5. Last SEC2000 we counted on most of the SEML subscribers and linked eclipse enthusiasts. We had 155 participants in Antwerp. Due to the fact that some sponsors withdraw their contribution Joanne and I lost about 5K US dollars. Nevertheless we will organize the next SEC2004. Facilities of the Open University as less expensive and we still hope sponsors and contributions will happen.

6. You are welcome to organize the raffle at TD2003.

From : Glenn Schneider <gschneider@mac.com>

Olivier, et al., If you are SERIOUS about a TSE 2003 option please read through...

I found the concept of an eclipse lottery, as you suggest, very amusing (if not tempting). It certainly is, to my knowledge, the first

(Continued on page 64)

T S E 2 0 0 3

time something of this nature - even as a thought in passing - has been mentioned. A rather innovative concept. I had previously suggested to some of my older eclipse chasing companions that we set up a tontine, i.e., " an investment plan in which participants buy shares in a common fund and receive an annuity that increases every time a participant dies, with the entire fund going to the final survivor or to those who survive after a specified time." with the proviso that the funds be used to further the eclipse chasing efforts of the sole survivor. {I said "older" companions, so I would have a better chance of outliving them ;-) }. In concert, I had previously mentioned my plan - once the technology is perfected, of having myself cryogenically frozen and periodically re-awakened for TSEs before refreezing over the next few hundred years. Well, maybe not too serious about the later part of this scheme...

However, to your query "How many of us would want to go to Antarctica to see the TSE 2003?", I'm afraid the weather in the circum-Antarctic coastal regions would put me off even more than the 19K$ pricetag - though such a piece of change is way out of my fiscal league anyway. During the austral pre-mid summer months pervasive cloud cover and high winds (which translate into rough seas) are not at all uncommon. Don't count on great mobility with a breaker if you run into any pack ice. This is less of a problem if you (I mean the generic 'you') take a ship "near" sunrise at about 55d south longitude, but there is not much maneuvering room there for escaping a large scale cloud system.

I actually had made a fairly detailed study of the Antarctic weather patterns - particularly in regard to cloud cover - in the early 1980's motivated by the 1985 TSE (which proved to be a logistical impossibility at the time; note there the pack ice was to thick and contiguous to get a breaker in at that time of year - for that path; and other problems, but that is another, lengthy, story). Then, in more detail about a dozen years ago after two observing seasons with our telescope at the South Pole (where I worked for two summers). While I only published information on cloud cover for the polar plateau in in the austral winter (see: Schneider, G., Paluzzi, P., and Oliver, J. P., 1989, "Systematic Error in the Synoptic Sky Cover Record of the South Pole", Journal Of Climate, 2, pp. 295. Or if you don't have that journal available to you see: http://nicmosis.as.arizona.edu:8000/PUBLICATIONS/JOC/JOC.html in the course of this study I became reasonably familiar with the prevailing conditions on and around the Antarctic with which eclipse chasers will have to contend. Eclipse chasers may be, in general, interested the above paper because of some of the "interesting" phenomenological properties of the lunar visabilities from the south pole discussed in that paper as well.

Anyway, had I the money I would elect to do TSE 2003 by air, not by sea (or ground-based on continent). Though I have done eclipses by air twice (of 22 attempts), I usually shy away from that as it is a less preferable venue for me. However, I think this is a case where the sky is the limit, so to speak. This would likely be significantly ess expensive than the $19K you quote, but still a fairly healthy sum. A while ago, I had an initial set of correspondences with an Australian based charter company (Cryoden, which I believe was mentioned on SEML before) which does Antarctic "tourist" overflights on a regular basis. They had seemed pretty receptive to the general proposition - but were not ready to proceed further with any committed planning at that time. I was given enough of a positive feeling, that I will now go ahead and present them with some specific flight concepts, along the lines of

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_01/CONCORDE_ECLIPSE.html but non-supersonically (presumed Mach 0.85 @ 30,000 feet) for TSE 2003. FYI - That page was presented to Air France and we were going to do a close variant of this (basing the flight from Ascension Island) but it never happened, sadly, because of the tragic loss of the Concorde in the summer of 2000. Zambia, where I ended up on terra firma, quite successfully was my second choice. Has anyone else here heard from Cryoden, or any other flights, since then?

As my TSE 2002 plans are now quite firm, I will be turning my attention (as time permits) to TSE 2003 and pursuing the air "option". I have no idea yet about details or costs let alone viability. I have no desire to do so as a "tour" type commercial venture - and it would likely be along the lines - for the flight - of what we did in 1992:

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_92/ECLIPSE92_REPORT.html and I am, admittedly, motivated by non-commerical umbraphillic self interest.

If others here are SERIOUSLY interested in this (probably based out of Perth, Australia) do let me know, as there is strength in numbers. If I have some idea as to a minimum number who might actually do this, given some cost threshold, I would be on firmer footing talking to air charter companies. Those on SEML who know me, know that I will indeed peruse this until it either happens, or is a drop-dead financial or logistical impossibility. In this case it clearly is technically viable, but there are obviously other hurdles to overcome. So, please if you are tinkering with TSE 2003 and would consider an airborne observation do contact me. No promises, of course, as this is still in the exploratory phase.

TSE 2003

Glenn Schneider http://nicmosis.as.arizona.edu:8000/ http://balder.prohosting.com/stouch/UMBRAPHILE.html

P.S. If all else fails, I'll buy a ticket to your lottery...

From : "Fred Quarnstrom" <quarn@u.washington.edu>

I held the drawing last night and I won.

From : "Crocker, Tony (FSA)" <Tony.Crocker@transamerica.com>

My understanding is that this particular Antarctica cruise is $18,995 per person. Why? It's the remotest part, south of the Indian Ocean, thus a long cruise lasting 3 weeks. The rates are more competitive on the more traveled Tierra del Fuego to Antarctic peninsula route, which can be done in one week.

IMHO this cruise is likely to be a large waste of money given the dismal weather odds. I'd like to see Antarctica sometime, but you can get a 20-day Antarctic peninsula + South Georgia and the Falklands cruise for 7-8K and see lots more stuff. But for the eclipse take the flightsee from Perth, see totality and save $. If we're really going to organize a lottery, let's do it for some plane tickets.

From : Shivapuja@aol.com

please continue to post progress reports regarding an airborne 2003 excursion to the list. thanks.

From : Michael Gill <eclipsechaser@yahoo.com>

Hi Glenn, My last correspondence with Phil Asker (Managing Director) of Croydon Travel was on December 27th. I am confident the flight will take place, operating out of Perth, as long as it is financially viable for them. The 'Aussie' eclipse on December 4th may be used as an opportunity to issue a press release about the November 2003 flight and promote interest.

Matters that still need resolving are the differential pricing of the port side windows (i.e. the eclipse-viewing side) and the other seats to be occupied by their normal Antarctic flyover clientele. Clearly, some premium will need to be paid by the eclipse-viewing passengers.

If there are any 'newbies' on the SEML who missed earlier announcements and are intrigued by this flight, then send an e-mail expressing your interest to: ant@croydontravel.com.au

Their web site is: http://www.antarcticaflights.com.au (although there is nothing about the eclipse on there yet)

See also ANAN 59/04: http://www.aad.gov.au/goingsouth/tourism/News/2001/14nov.asp#4

Michael Gill Ps. I have no financial interest in Croydon Travel - my benefit is trying to see an eclipse that I might otherwise miss.

From : "Olivier \"Klipsi\" Staiger" <olivier.staiger@span.ch>

> My understanding is that this particular Antarctica cruise is $18,995 per person. Why? It's the remotest part, south of the Indian Ocean, thus a long cruise lasting 3 weeks.

actually, 4 weeks. 29 days.

> The rates are more competitive on the more traveled Tierra del Fuego to Antarctic peninsula route, which can be done in one week.

(Continued on page 66)

TSE 2003

but no eclipse visible there.

> IMHO this cruise is likely to be a large waste of money given the dismal weather odds.

negative, Sir !

> I'd like to see Antarctica sometime, but you can get a 20-day Antarctic peninsula + South Georgia and the Falklands cruise for 7-8K and see lots more stuff.

how about Kerguelen Island, Crozet Island, Heard Island , Emperor Penguin rookeries?

I repeat what I thought of earlier: You go to the peninsula, its like staying in orbit around Earth. You go to the other side, it's like you travel to the Moon.

> But for the eclipse take the flightsee from Perth, see totality and save $. If we're really going to organize a lottery, let's do it for some plane tickets.

I actually start to wonder if Croydon will really do a flight for the eclipse ? I mean: in the past 2 seasons (summer south), like this current season, they have not done any flight out of Perth, only from Sydney, Melbourne, Adelaide. I remember one year, maybe 1998 or 1999, where they had just one flight out of Perth, while all other flights were from Sydney, Melbourne (where the money is) A B-747 can fly for 12 hours safely. But maybe Perth-Mirniy-Perth is longer ??? Bad jetstream or what ? Klipsi

Support Pat and Joanne

From : "Olivier \"Klipsi\" Staiger" <olivier.staiger@span.ch> To : SOLARECLIPSES@AULA.COM> Date : Thu, 31 Jan 2002 21:18:43 +0100

Patrick Poitevin wrote: Due to the fact that some sponsors withdraw their contribution Joanne and I lost about 5K US dollars. Nevertheless we will organize the next SEC2004.

well, if we really end up doing some kind of a draw or lottery for Antarctica, I would suggest we include a little more money to pay back to Joanne and Pat 5k $. They really deserve it. What a great job they do!

actually, let's do this calculation: 5000$ divided by 310 listmembers is really only about 16$, for crying out loud !!! 16$!!!
So please, let's show some solidarity here, right NOW !

Pat, please, give us your complete mailing adress , or banking info, and we will, I hope all of us, put 16$, or more, in an envelope and mail it to you. No obligation, just because we love you. Santa Claus is coming back ;-) Klipsi

From : "Cliff Turk" <cliffturk@yebo.co.za>

Hi All I agree we should see to it that Patrick and Joanne get back their loss. We can always excuse ourselves by calling it a wedding present!

But BEWARE. Let's have a check of the UK banking costs first and maybe send one check between several of us to avoid costs. In the country I live in, the banks charge a minimum equal to $8 "exchange commission" for every check deposited. That makes 50% lost if we all send $16 checks! Hopefully the UK banks are not such accomplished thieves as my local banks, but we should be careful. Will someone in UK please make enquiries and let us all know. We would hate P & J to get only half of the wedding present I am sure we all want to give to them. Cliff Turk

From : Sheridan Williams <sheridan@clock-tower.com>

I live in England and Cliff Turk is quite correct about UK banking charges. If I bank a $25 cheque for my book, I rarely see more than about $12-$15.

My suggestion would be for US-based people to send US cheques to one person in the US who would then send one big cheque. Best wishes Sheridan Williams.

From : MrEclipses@aol.com

Sheridan Williams makes an excellent point!

I just returned from England were I was honored to be the best man at Patrick and Joanne's wedding. I hope to get some wedding photos on the web soon.

In the mean time, I would be happy to serve as banker for anyone in the US who would like to contribute to a "wedding present" to help offset P & J's losses from the 2000 Solar Eclipse Conference.

Just send your check (payable to Fred Espenak) with a copy of this email to:

Fred Espenak
P.O. Box 141
Tracys Landing, MD 20771

At the end of February, I will send Patrick and Joanne one check for the sum amount collected along with a card listing everyone who contributed.

If you want to include a personal message/card along with your gift, I will forward that tp P & J as well. Thanks for the great idea Sheridan! Fred Espenak

From : "Patrick Poitevin" <patrick_poitevin@hotmail.com>

Dear All, We are just back from our honeymoon. We had a perfect wedding and a wonderful honeymoon in Southern California and Las Vegas. Sorry for those we could not invite for the wedding. It was in a very close and small family and friends atmosphere. Thank you all for the congratulations via the SEML and all those received privately. We were touched by all messages we got. We were even more surprised you are collecting us a wedding present.

We are so so sorry that the earlier message of our personal investment in SEC2000 was misunderstood. We enjoyed the International Solar Eclipse Conference SEC2000 in Antwerp so much that we decided, after that conference, on our way back home from Belgium to England, to organize a second edition in 2004. Many contacts have been made already and some guest speakers has been agreed. More will be announced later this or next month. The investment we made that time was worth while and we will never regret. It only warned for the amount of SEML whom will attend a next conference and the amount of support you might expect.

Thank you all so much for all your friendship. What we do, the SENL, the SEML, TD2003 and SEC2004, is all with pleasure and love for solar eclipses. We do not want to make any profits at all in what we do. We do not want to be linked to any institute, university, observatory or any other organization. That's makes us independent and free.

We hope we meet you all, one day, at any place on earth. And ... keep those solar eclipse related messages coming ... Best regards, Joanne and Patrick

Joanne & Patrick

The sole Newsletter dedicated

WE'RE ON THE WEB AT
http://www.Mr.Eclipse.com/SENL/SENLinde.htm

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From Juan Carlos Casado