Volume 9, Issue 1
SOLAR ECLIPSE NEWSLETTER

January 2004

SOLAR ECLIPSE NEWSLETTER

The sole Newsletter dedicated to Solar Eclipses

INDEX

Dear SENL Readers,

Happy New Year to you all. My your wishes come true!!!

Joanne & Patrick

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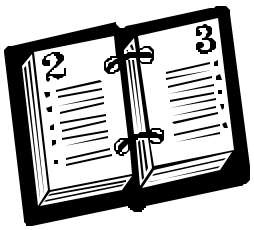
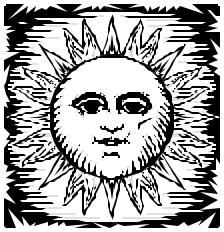


January 2004



Dear All,

Looks like I forgot to post earlier ... Please find herewith the solar eclipse calendar (SECalendar) for January. If you have any additional information, queries or remarks, please drop us a mail.

For the whole Solar Eclipse Calendar, see our Solar Eclipse WebPages at

http://solareclipsewebpages.users.btopenworld.com

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. January 01 1805 Partial solar eclipse on New years day. January 01, 1824 Annular eclipse on New Years day. January 01, 1889 New Year's Day Eclipse. Illustration with direct telegraph line from San Francisco to New York for the astronomers has been published in many eclipse books. January 01, 2215 Annular eclipse of January 01, 2215 will be visible on New Years eve December 31, 2214 for the South-east Pacific. January 01, 2272 Partial Solar Eclipse on New years day January 01, 2272.

January 01, 1889 Last year where there are two total solar eclipses in one calendar year. First total solar eclipse is on 1 January, second on 22 December 1889. The same year, there is an annular eclipse on 28 June. The next calendar year where there are two total solar eclipses is in 2057 (5 January and 26 December). Ref. More Mathematical Astronomical Morsels by Jean Meeus; Willmann-Bell, 2002.

January 01, 1981 Minor planet (2761) Eddington 1981 AE. Discovered 1981 January 1 by E. Bowell at Anderson Mesa. Named in memory of the great English astronomer and physicist Arthur Stanley Eddington (1882-1944) on the occasion of the centennial of his birth. Eddington made fundamental contributions to studies of stellar structure and relativity, and he was also a lucid and indefatigable popularizer of astronomy. (M 7621) Eddington served as president of the International Astronomical Union from 1938 to 1943. He is also honored by a lunar crater. Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg

January 02, 1424 The annular eclipse on January 2, 1424 was visible on New Years day for the South pacific, east of New Zealand.

January 02, 1892 Death of Sir George Biddell Airy (1801-1892) in "White House," Greenwich of injuries from a fall. British Astronomer Royal from 1835 to 1881. President of the Royal Society from 1871 till 1873. Calculated distance to the sun and observed transit of Venus, etc. (ref. DD 7/98, Rc 1999) and solar eclipses. Born in Alnwick, Northumberland on 27 July 1801. Died in Greenwich London on 2 January 1892. Ref. The Bibliographical Dictionary of Scientists, edited by David Abbott, 1994.

January 03, 1976 Minor Planet (2490) Bussolini 1976 AG. Discovered 1976 January 3 at the Felix Aguilar Observatory at El Leoncito. Named in memory of Juan A. Bussolini, S.J. (1905-1966), solar physicist, director of the Observatorio de Fisica Cosmica de San Miguel and a member of the commission of the International Year of the Quiet Sun. He was also an important benefactor to the Felix Aguilar Observatory. (M 8800) Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg

January 04, 1989 Minor planet (4499) Davidallen 1989 AO3. Discovered 1989 January 4 by R. H. McNaught at Siding Spring. Named in honor of David {Anthony} Allen {1946-1994}, staff astronomer at the Anglo-Australian Observatory (AAO). Following his Ph.D. from Cambridge University, Allen held research fellowships at the Hale Observatories and the Royal Greenwich Observatory. In 1975 he became one of the "founding members" of the scientific staff of the AAO, initially as a research fellow. He has remained as one of the pillars of that establishment ever since, having become the only permanently-appointed research astronomer. Notable for his extraordinarily wide interests across all astronomy, from the solar system to observational cosmology, his main contributions have been in the field of infrared instrumentation and its applications. He developed the radiometric method for determin-

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ing asteroid diameters and recently discovered several new infrared "windows" in the atmosphere of Venus. Allen is also a leading figure in public education in astronomy, contributing to many radio and TV programs and the author of many popular articles and several books. (M 17980) Citation prepared by R. D. Cannon at the request of the discoverer. Obituaries published in Publ. Astron. Soc. Aust., Vol. 12, No. 1, p. 139-141 (1995); Observatory, Vol. 114, No. 1122, p. 250-252 (1994); J. Br. Astron. Assoc., Vol. 104, No. 5, p. 259 (1994); Q.J.R. Astron. Soc., Vol. 36, No. 2, p. 173-174 (1995). Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg. David Allen wrote, together with Carol the book <Eclipse>.

January 05, 1935 Extreme solar eclipse. Magnitude of the eclipse was 0.0012. The maximum is only 0.12 percent of the solar diameter. This solar eclipse was <visible> in the South Pole sea. This eclipse is followed by a solar eclipse on 3 February 1935 of the same eclipse season.

January 05, 1989 Minor planet (4498) Shinkoyama 1989 AG1. Discovered 1989 January 5 by T. Seki at Geisei. Named in honor of the solar physicist Shin Koyama, who has served as a professor at Kagawa University for 30 years. Born in Kyoto in 1927, Koyama has retired from public life in March 1991. (M 18001) This planet was first (MPC 17980) accidentally named Koyama. This name, however, was already assigned to planet (3383). Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg

January 05, 2057 Next year where there are two total solar eclipses in one calendar year. There is a total solar eclipse on 5 January and one on 26 December 2057. The same year thers is as well an annular eclipse on 1 July. The last occurance there were two total solar eclipses in one calendar year was in 1889. Ref. More Mathematical Astronomical Morsels by Jean Meeus; Willmann-Bell, 2002.

January 07, 1976 Minor Planet (2062) Aten 1976 AA. Discovered 1976 January 7 by E. F. Helin at Palomar. Named for the Egyptian sun god. This object is distinguished among the Apollo asteroids as the first discovered to have a semi major axis less than 1 AU and a period less than one year. (M 4420) Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg

January 08, 1587 Johannes Fabricius was born. Fabricius was a Dutch astronomer who discovered the sunspots and Sun rotation. Died in 1615. (ref DD. 01/00)

January 08, 1642 Death of Galileo Galilee. Discovered his eye illness in January 1637. He could not read or write without technical help in June of the same year. Before the end of the year he was completely blind. His sight was eclipsed forever. Ref. De jonge Galileo, Davidfonds nr. 341. After he became blind, Galileo was permitted to have his 2 friends (Vincenso Viviani, geometrician, and Evangilista Torricelli, a physicist) to live with him until he died on 8 January 1642. Ref. The Bibliographical Dictionary of Scientists, edited by David Abbott, 1994.

January 08, 1868 Sir Frank W. Dyson was born in Ashby de la Zouch, Leicestershire UK. Dyson proved that Albert Einstein (1879-1955) was right about light being bent by gravity. Co-writer of the book Eclipses of the Sun and Moon, 1937 (with R.v.d.R. Woolley). Died in 1939 on 25 May off the coast of South Africa while on a sea voyage from Australia. He was an active member of several expeditions to study total eclipses of the sun and in 1906 he published a book in which he discussed data he had obtained on these occasions on the spectrum of the solar chromosphere. Ref. The Bibliographical Dictionary of Scientists, edited by David Abbott, 1994.

January 09, 1201 <Within the sun there was a black spot as large as a date> (ref BAA 12/00)

January 10, 1829 Birth of James Francis Tennant (1829-1915). During an eclipse seen from the Red Sea through India to Malaysia and New Guinea, prominences are first studied with spectroscopes and shown to be composed primarily of hydrogen by James Francis Tennant (1829-1915), UK, John Herschel (UK - son of John F.W. Herschel, grandson of William), Pierre Jules Cesar Janssen (1824-1907, France), George Rayet (France), and Norman Pogson (UK/India). (Ref. Rc 1999)

January 12, 1983 Minor planet (3819) Robinson 1983 AR. Discovered 1983 January 12 by B. A. Skiff at Anderson Mesa. Named in honor of Leif J. Robinson, editor of 'Sky and Telescope'. Robinson's career as an observer began with a series of planetary drawings and observations of the rapidly changing variable stars in the Orion Nebula. He worked at the Griffith Planetarium in Los An-

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geles before joining the staff of the magazine in 1962 as an editorial assistant, and he succeeded the late Joseph Ashbrook {see planet (2157)} as editor in 1980. Robinson has been an active promoter of professional-amateur cooperation in astronomy, and retains interests in solar-eclipse viewing and bird-watching. (M 16246) Citation provided by D. H. Levy, S. J. Edberg and J. K. Beatty at the request of the discoverer. Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg

January 12, 1986 Death of Ludwig Biermann, German astro physician. His research of comet tails made him predicting the solar wind in 1951 with success. He described models of the corona and chromosphere of the sun s. (ref DD 01/00)

January 13, 1983 Minor Planet (5862) Sakanoue 1983 AB. Discovered 1983 January 13 by T. Seki at Geisei. Named in honor of Tsutomu Sakanoue (1921-), professor emeritus of Kyushu University whose specialties included agricultural meteorology, countermeasures against meteorological disasters, medical meteorology and rainmaking. An amateur astronomer with particular interests in atmospheric seeing, the green flash and shadow bands, he contributed to the popularization of astronomy as an advisor at several science museums. He also served as vice president and president of the Oriental Astronomical Association. (M 32788) Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg Name proposed by the discoverer following a suggestion by S. Murayama, T. Sato and A. Fujii.

January 14, 0484 "A year before his death there were various omens. There was an eclipse of the Sun which was so pronounced as to turn day into night and the darkness was deep enough for the stars to become visible; it occurred in the eastern horn of the sign of Capricorn. And the almanacs predicted another eclipse that would occur after the first year. They say that such events that are observed to happen in the heavens are indicative of things that happen on the earth; so that these eclipses clearly foretold us of the privation and departure as it were of the light of philosophy." Refers to a total solar eclipse in Athens of 14 January AD 484. From: Marinus, Greek philosopher, Life of Proclus. Quoted in Historical Eclipses and Earth's Rotation, by F Richard Stephenson, Cambridge University Press, 1997, page 368.

January 14, 0484 Athens "The eclipse of Sun was so pronounced that it turn day into night and the darkness permitted to see stars..." Marinus Neapolitanus. Life of Proclus, chapter 37 (ref. PG01/00)

January 14, 1742 Death of Edmond Halley (1656-1742 or 1743) in Greenwich, British astronomer. Famous for comet Halley. Observed the so called Bailys' beads before Francis Baily (1774-1844). Royal Astronomer Royal from 1720 till his death. The Royal Society mentioned 14 January 1742 or 1743. Ref. Rc 1999. Born in Haggerton near London on 8 November 1656. Ref. The Bibliographical Dictionary of Scientists, edited by David Abbott, 1994.

January 15, 1815 Birth of Warren de la Rue (1815-1889), Guernsey UK as oldest son of Thomas de la Rue, a printer. Warren de la Rue (1815-1889), UK and Angelo Secchi (1818-1878), Italy, use photography during a solar eclipse in Spain to demonstrate that prominences (and hence at least that region of the corona) are part of the Sun, not light scattered by the Earth's atmosphere or the edge of the Moon, because the corona looks the same from sides 250 miles apart. (Ref. Rc 1999). He died in London 19 April 1889. Ref. The Bibliographical Dictionary of Scientists, edited by David Abbott, 1994.

January 15, 1948 Death of Henri Alexandre Deslandres (1853-1948) in Paris, French physicist and astronomer. Did spectroscopic Solar research. Designed independent but at the same time from Hale the spectra heliograph. (Rc 1999)

January 15, 1976 German satellite Helios 1 passes the Sun at only 48 million km.

January 15, 2010 In the 21st century there are 3 annular solar eclipses, of the same saros, with a duration exceeding 9 minutes: 15 January 2010 with 11m11s, 26 January 2028 with 10m31s and 5 February 2046 with 9m46s. Ref. More Mathematical Astronomical Morsels by Jean Meeus; Willmann-Bell, 2002.

January 16, 1135 "Shao-hsing reign period, 5th year, 1st month, the first day of the month. A man named Ch'en Te-I predicted that the Sun should be 8-1/2 tenths eclipsed with the beginning of loss in the initial half of the hour of the sxu. (These predictions) were verified by observation." Refers to a partial solar eclipse of 16 January 1135. From: Sung-shih (Chinese). Quoted in Historical Eclipses and Earth's Rotation, by F Richard Stephenson, Cambridge University Press, 1997, page 253.

January 16, 1135 Lin-an Shao hsing reign period, 5th year, first month, the first day. Ch'en Te-I predicted that the Sun should be

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eclipsed..." Sung-shih, chapter 81 (ref. PG 01/00)

January 16, 2094 Total solar eclipse on the South Pole. Ref. More Mathematical Astronomical Morsels by Jean Meeus; Willmann-Bell, 2002.

January 17, 1938 William H. Pickering, American astronomer died. He studied several solar eclipses. Born in 1858. (ref DD 01/00)

January 17, 2447 Three total solar eclipses visible within a strip of the Pacific Ocean south of Hawaii over a period of only 4.3 years: 17 January 2447, 12 May 2450 and 1 May 2451. Approximate geographic longitude and latitude is 159 to 156 degrees West, 10 degrees North. (Ref. JM 09/99)

January 18, 0120 "On the day wu-wu, the 1st day of the 12th lunar month, the Sun was eclipsed; it was almost complete. On the Earth it became like evening. It was 11 degrees in the constellation of Hsu-nu [the Maid]. The woman ruler [ie the Empress Dowager] showed aversion to it. Two years and three months later, Teng, the Empress Dowager, died." Refers to a solar eclipse of 18 January AD 120. From: the Hou-Han shu ("History of the Later Han Dynasty"). (China). Quoted in Encyclopedia Britannica CD 98, and in Historical Eclipses and Earth's Rotation by F Richard Stephenson, Cambridge University Press, 1997, page 237. .

January 18, 0120 Lo yang "Yuan ch'i reign period, 6th year, 12th month, day wu wu. The Sun was eclipsed. It was almost completes. On Earth, it was like evening..." Hou-han-shu, chapter 28. (Ref PG 01/00)

January 18, 0120 Of the 14 summits 8000 meter, 9 did witness a total eclipse of the sun: Everest, Kangchenjunga, Lhotse, Makalu, Cho Oyu, Dhaulagiri, Manaslu, Annapurna and Shisha Pangma. This is the most summits in totality between year 0 and 3000. Ref PA 6/00

January 18, 1898 Total solar eclipse on the Everest. The next total solar eclipse on Everest will be on march 18th 2360 (totality : 94 sec) and the last one occurred on Jan 18th 1898 (65 sec). Totality is also on the 8000 meter summits Lhotse and Makalu. Ref. PA 5/99

January 19, 0301 From China <Within the sun there was a black vapour.> (ref BAA 12/00)

January 19, 1952 Birth of Fred Espenak. Fred is a "Jr." because his dad is still living and his dad is Fred Espenak Sr. at the time of this writing Aug. 2002). He was actually born in a hospital in a place called Princess Bay, but he grew up in a town called Annadale, Staten Island, New York. Ref. Corr. PT/PP 08.02.

January 21, 1292 "Chiih-yuan reign-period, 29th year, first month, day chia-wu. The sun was eclipsed. A darkness invaded the Sun, which was not totally covered. It was like a golden ring. There were vapours like golden earrings on the left and right and a vapour like a halo completely surrounding it." Refers to an annular eclipse of 21 January 1292. The halo is caused by ice crystals in the Earth's atmosphere. From: Yuan-shih . Quoted in Historical Eclipses and Earth's Rotation, by F Richard Stephenson, Cambridge University Press, 1997, page 258.

January 22, 1969 Launch Orbiting Solar Observatory 5, American spacecraft for Solar research.

January 23, 0901 Antakyah "We observed the solar eclipse at Antakyah on the 23rd of Kanun al thani in the year 1212 of Dhu al Qarnayn... more than half of the Sun was eclipsed..." Al Battani (Ref. PG 01/00)

January 24, 1004 Cairo "The was in the afternoon of monday the 29th of the month of rabi al-Awwal in the year 394 of al-Hijrah..." Al Zij al Kabir al Hakimi. (ref. PG 01/00)

January 24, 1544 Rainer Gemma observed the solar eclipse by using of solar projection. (ref DD 01/00)

January 24, 1882 Harold Delos Babcock was born in Egerton, Wisconsin. Babcock was an American solar astronomer who proposed in 1961 that the sunspot cycle was the result of the Sun's differential rotation and magnetic field. His most important contri-

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butions were to spectroscopy and the study of solar magnetism. Died in 1968. Ref. The Bibliographical Dictionary of Scientists, edited by David Abbott, 1994.

January 24, 1914 Sir David Gill, Scottish watchmaker and astronomer died. Designed the value of a helio meter. Born in 1843 on 12 June. He retired in 1906, for health reasons, and lived in London until he died of pneumonia on 24 January 1914. Observed the transit of Venus in 1874. Ref. The Bibliographical Dictionary of Scientists, edited by David Abbott, 1994.

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 air-ship 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. Ref. SENL 02.02

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 lo-cated 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 technical term in the literature of the subject by Saturday night." Ref. SENL 02.02

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. As per Joe Rao: 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, ad-vance the film and hope that my next pot-shot would not end up on the previous frame Ref. SENL 02.02

January 24, 1982 Minor planet (2602) Moore 1982 BR. Discovered 1982 January 24 by E. Bowell at Anderson Mesa. Named in honor of Patrick Moore {1924- }, astronomer, broadcaster, and writer. For some years director of the Lunar Section of the British Astronomical Association, Moore has been most energetic and successful in popularizing astronomy. He is author of many books and has regularly presented 'The Sky at Night' on BBC television since April 1957. In 1967 he was awarded the Order of the British Empire. (M 7157) Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg. Patrick Moore observed many solar eclipses.

January 24, 1992 Minor Planet (6731) Hiei 1992 BK. Discovered 1992 January 24 by Y. Kushida and O. Muramatsu at Yatsugatake. Named in honor of Eijiro Hiei (1931-), professor at Meisei University and professor emeritus of the National Astronomical Observatory of Japan. A solar physicist best known for his research on white-light flares, Hiei was the fourth director (1982-1992) of the Norikura Solar Observatory, where he conducted coronagraphic studies. (M 28090) Name proposed by the discoverers following a suggestion by T. Sakurai. Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg Hiei was also one of the guest speakers at the conference SEC2000.

January 25, 1736 Birth of Joseph Louis Lagrange (1736-1813), French mathematician and astronomer. Described the 3 points, later called Lagrangepoints. (Ref. Rc 1999)

January 25, 1742 Edmund Halley, British astronomer died. During an eclipse in England, is the first to report the phenomenon later known as Baily's Beads; also notes bright red prominences and the east-west asymmetry in the corona, which he attributes to an at-

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mosphere on the Moon or Sun. Halley observed from London (John Flamsteed (1646-1719) observed from Greenwich). Halley also probably draw the first eclipse map. Born in 1656.

January 25, 1908 The corona of the Sun was photographed for the first time (not during a TSE).

January 25, 1944 Hergé, with his famous Adventures of TINTIN (Kuifje) published his book Prisoners of the Sun in 1949. The Total Solar Eclipse described in this book is the one in South America on January 25, 1944.

January 26, 2003 Start up of the SEWP Mailing List by Joanne and Patrick Poitevin. December 10, 1997 the Solar Eclipse Mailing List (SEML started. There were so many briefings and postings to private addresses, professional and amateur eclipse enthusiasts, that there was a need to start with the SEML. After 5 years, it seemed the SEML was so big, with over 300 subscribers, and up to 10 messages a day. It is a live READ and WRITE mailing list. In the meanwhile, postings where send to those whom did not want to have the daily live messages. Such as the SECalendar, updates on the SEWebPages, the SENewsletter, and the latest status on SEConferences. Over 150 contacts in addition to the SEML and to make sure the addresses could not be used or mis-used, the SEWP Mailing List started 26 January 2003. It is a READ only list and there is maximum one message a week. If you are subscribed to the SEML, there is no need to subscribe as well to the SEWP. All messages of the SEWP will appear as well on the SEML.
January 28, 1611 Born of J. Hevelius, Polish amateur astronomer, discovered the libration of the Moon.

January 29, 1932 (2485) Scheffler 1932 BH. Discovered 1932 January 29 by K. Reinmuth at Heidelberg. Named in honor of Helmut Scheffler (1928-), staff member of the Heidelberg Königstuhl Observatory and professor of astronomy at Heidelberg University (1963-1991), on the occasion of his retirement. He has made important contributions to the fields of radiation transfer in the outer solar atmosphere, atmospheric seeing and the structure of the interstellar medium. In collaboration with H. Elsässer {see planet (4385)}, Scheffler has written the well-known textbooks Physik der Sterne und der Sonne and Physics of the Galaxy and Interstellar Matter. (M 18643) Name proposed and citation prepared by G. Klare and L. D. Schmadel. Endorsed by E. Bowell, who found the key identification involving this planet. Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg

January 30, -0280 (0281 BC) Solar eclipse in Babylon (ref. PG 01/00)

January 31, -0253 (0254 BC) Solar eclipse in Babylon (ref. PG 01/00)

January 31, 1310 "On the last day of January at the 8th hour of the day at Avignon there was an eclipse of the Sun, and it was eclipsed in an extraordinary manner, and was notably sparkling. There appeared as if at nightfall a single star, a second was the opinion of the crowd. Then a remarkable semicircle was seen and it lasted until past the night hour." . Refers to a total solar eclipse of 31 January 1310. From: Ptolomaei Lucensis Hist. eccles.. Quoted in Historical Eclipses and Earth's Rotation, by F Richard Stephenson, Cambridge University Press, 1997, page 382.

January 31, 1972 Launch of HEOS 2 (US). Research of magneto sphere, solarwind and the interaction between. Ref. DD 2/99.

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 interested in solar eclipses, Carret has traveled the globe for most of the century in search of them - from Borneo to Siberia, from Baja to Kenya and from Prince Edward Island to Indonesia. Dean of American investment management firms and legendary stock picker, he created one of the first mutual funds in the U.S., Pioneer Fund, in 1928 and helped to found the mutual fund industry. He has been generously concerned about education, and about the environment and wildlife. (M 31025) Dictionary of Minor Planet Names - ISBN 3-540-14814-0 - Copyright © 1999 by Springer-Verlag Berlin Heidelberg. Mr. Carrett passed away in 1998. Michael saw him on the cruise ship '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! Ref. SENL 02.02

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

Best regards, Patrick and Joanne

SETalk

SEC2004 in EMA68

From: Wolfgang R. Dick Date: Wed, 10 Dec 2003 18:24:27

* ELEKTRONISCHE MITTEILUNGEN ZUR ASTRONOMIEGESCHICHTE *
* *
* Herausgegeben vom Arbeitskreis Astronomiegeschichte in der Astronomischen Gesellschaft *
* *
* Nr. 68, 10. Dezember 2003 * Redaktion: Wolfgang R. Dick und Hilmar W. Duerbeck *

.....
Item 6 EMA Nr. 68, 10. Dez. 2003
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Solar Eclipse Conference

The next international Solar Eclipse Conference 2004 (SEC2004) will be held on 2004 August 20-22 at Open University, Milton Keynes, England. The main objective of the conference is to bring together professionals and amateurs to discuss all aspects of solar eclipses. Two days of lectures will be given in each of the following disciplines: predictions, mathematics, solar physics, weather forecasting, eye safety, diameter measuring, edge and central, and ancient eclipse research. Both past and future solar eclipses will be discussed, as well as the 2004 transit of Venus.

The Open University has its headquarters at Walton Hall, in Milton Keynes which is midway between London and Birmingham, and Oxford and Cambridge.

It is necessary to make prior arrangements if you wish to attend SEC2004 or to make a presentation, lecture, or poster display. Please contact Patrick Poitevin (solareclipsewebpagesSenl200401btopenworld.com).

The programme will include also several lectures on historic topics:

Leo Dubal (France): "Questioning Ancient Eclipse Records"

Pierre Guillermier (France): " Eclipse Paintings in the XVIth and XVIIth centuries: The Pieter Paul Rubens' Christ on the Cross and the Antoine Caron's Dionysius the Areopagite"

Peter Hingley (UK): "Picturing Eclipses, 1478 - 2000"

Eli Maor (USA): "Jeremiah Horrocks and the 1639 Transit of Venus"

Eckehard Schmidt (Germany): "Nuremberg - its history of solar eclipses"

F. Richard Stephenson (UK): "Historical eclipses: then and now"

Robert van Gent (The Netherlands): "Eclipse Cycles"

More information is available at the conference's web site:

http://solareclipsewebpages.users.btopenworld.com/SEC_files/SEC2004.html

[Source: conference's web site, see above]

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(Continued on page 9)

SEDates

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Herausgegeben vom Arbeitskreis Astronomiegeschichte in der Astronomischen Gesellschaft

Redaktion: Dr. Wolfgang R. Dick <wdickSenl200401astrohist.org> und Dr. Hilmar W. Duerbeck <hduerbecSenl200401vub.ac.be>

Archiv bisheriger Ausgaben: http://www.astrohist.org/aa/ema/

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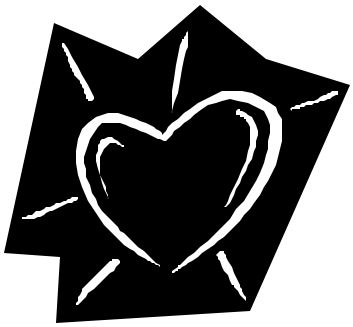
Anschriften des Arbeitskreises Astronomiegeschichte:

URL: http://www.astrohist.org/

Vorsitzender: Prof. Dr. Peter Brosche, Observatorium Hoher List der Sternwarte der Universitaet Bonn, D-54550 Daun, Tel.: +49(0) 6592 2150, Fax: +49(0)6592 985140, e-mail: pbroscheSenl200401astro.uni-bonn.de

Sekretaer: Dr. Wolfgang R. Dick, Vogelsang 35 A, D-14478 Potsdam, e-mail: wdickSenl200401astrohist.org

Spendenkonto der Arbeitskreises Astronomiegeschichte: Empfaenger: Astronomische Gesellschaft, Konto-Nr.: 310 330 402, Volksbank Coesfeld-Duelmen, BLZ 401 631 23 Ueberweisungen aus dem Ausland: Konto Nr. 16218-203, Postbank Hamburg, BLZ 200 100 20 Einzahlungen auf letzteres Konto bitte mit Vermerk "Fuer Arbeitskreis Astronomiegeschichte".



SEScannings

SEML

Dear SEML subscribers,

We have made some modifications and add some items on the SEML rules. See our WebPages at http://solareclipsewebpages.users.btopenworld.com/SEML_files/SEML.html

For those familiar with the SEML objectives, privacy, copy rights, questionnaire, and rules please find below changes or additions made.

- The SEML started off with distributing solar eclipse related messages to a limited amount of solar eclipse friends.

- This is the first, and at the moment only, mailing list devoted solely to topic of solar eclipses on the internet.

- If we notice your e-mail account creates error messages for at least 2 weeks, we will remove your e-mail address from the list without any notification.

- We have broaden our topics about a year ago and messages should be related to Eclipses (Solar and Lunar) and Planetary Transits.

- Do not use any signatures containing webpages, statements or any other writings which have nothing to do with solar eclipses, might provocate or might cause reactions.

- In return to our free services we would expect that SEML subscribers with WebPages make sure there is a link to our solar eclipse webpages at http://solareclipsewebpages.users.btopenworld.com . In addition, we would apprecicate a special note or line on activities such as future eclipse conferences, the SEML or the SENL.

- To avoid misuse, we make sure that e-mail addresses, used in the Solar Eclipse Newsletter (SENL), are unreadable for spam users.

- The number of SEML subscribers, status and countries are announced on a regular base on these solar eclipse webpages.

- We will add you to the SEML subscribers list, once we have received your completed questionnaire. If we do not receive it, nothing will happen. When we have your completed questionnaire, we will add your e-mail address on the READ ONLY list. As soon as the List Owner feels comfortable with the new SEML subscriber, we will add you on the READ and WRITE list. In the meanwhile you can send your SEML postings to the List Owner, whom will forward to the entire list.

We would appreciate if you would like to make your self familair with the above. It will make the Solar Eclipse Mailing List (hopefuly) the best for us all. After all, this is a private mailing list and we do our extremely best keeping the list solar eclipse related and free of spam and hackers.

And ... please keep those solar eclipse related messages coming ...

Best regards,

Index SENL December

Dear all, Please find herewith the Index of the December 2003 issue of the Solar Eclipse Newsletter (SENL). Beside the topic, the page number is listed. Please post your solar eclipse related contributions to us. Thank you.

The SENL can be downloaded free of charge. You only need Adobe Acrobat Reader on your computer. For Adobe see

http://www.adobe.com/ products/acrobat/readstep2.html

.../...

SEScannings

See the latest SENL and also the complete SENL Index since November 1996 at our Solar Eclipse WebPages at

http://solareclipsewebpages.users.btopenworld.com

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

http://sunearth.gsfc.nasa.gov/eclipse/SENL/ and the index at

http://www.mreclipse.com/SENL/SENLinde.htm with example: SENL0011.pdf

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

Comments and contributions are welcome at solareclipsewebpagesSenl200401btopenworld.com

And ... keep those solar eclipse related messages coming ... Best Regards, Patrick and Joanne

Pasachoff Book

From: PP

The Complete Idiot's Guide to The Sun by Jay M. Pasachoff, Ph. D.

Alpha Books, New York. See WebPages at www.williams.edu/astronomy/sun and is available through www.solarcorona.com

Foreword by Dr. Stephen L. Keil, director National Solar Observatory.

This book is completely different as any other solar book. With the special notes: The Solar Scope - things you should know; Caution - any remarks and cautions; Solar Scribblings - anecdotes; Sun Words - terms used; Fun Sun Facts - particular items of interest.

The graphics are fun too. Easy titles such as "The Sun Shines on Us" for e.g. part 1. Although black and white pictures, the latest updates are given, plus special 8 color pages, the latest WebPages. The color pictures are scientific, not what Jay's called "from touristic eclipse expeditions". "Constancy, Thy Name Isn't the Sun" is another original title.

After each chapter, "The Least you Need to Know" gives a list of tips and facts about the chapter - a resume of the chapter. The chapter starts as well with bullet points "In this Chapter"

The book is in 6 parts:

1. What the Sun looks like
2. The Sun Through time
3. Eclipses of the Sun
4. The Sun from Mountain tops
5. The Sun from Space
6. The Sun-Earth connection

At the end the Appendixes with Glossary, Online Solar Glossaries, a list of Solar Observatories, Astronomy Clubs and Solar Interest Groups, A word on Temperature and Selected Readings.

Historical graphics such as Galileo's sunspots in 1613. Stonehenge and even "Carhenge", used cars standing on end and erected as lintels to mime Stonehenge in Nebraska.

Questions as why is the sky blue, why are sunsets red, topics as green flash, rainbows, dogs and pillars.

SEScannings

Some historical eclipses only, there where special events where noted such as Baily's Beads, Coronium, first photograph, etc. Eclipse trip accounts of Jay's expeditions in brief "To the end of the Earth" or "to be in the Moon's Shadow". Future eclipses such as 2003, 2005, 2006, 2008, 2009, 2017. And future partial eclipses for the US. Useful tips for eclipses photographing, visual and video.

Transits old and future. But Jay mentions the Transit of Mercury of 6 November 1993 "in the corona only". "The transit does not appear in ordinary tables of transit of Mercury". Observer in front of solar corona by Yohkoh. Though, it is in Jean Meeus' Tables and moreover, I did observe the Mercury transit myself from New Zealand.

The sun from mountain tops gives an explanation why solar observatories need to be on top of high mountains, towers, lakes. Lake solar observatories are in Udaipur, India and a small island in a reservoir in Huairou, China. The ideal list for solar observatory hunters.

On page 285 the solar scribblings: "Paintings from the seventeenth and eighteenth centuries show ice skating on canals in Holland, something that is now rarely possible." Though, I still remember versions of the so called "elf steden tocht" in Holland. Ice skating in Holland where thousands of ice skaters run between 11 major cities/towns. The last ice skating race between 11 towns was in 4 January 1997 and was the heaviest since 1963 with wind chill temperatures up to -18 degrees C. Thanks to Govert Schilling for this information.

This book is surely a must for every solar or eclipse enthusiast. A wonderful work, very original and very updated. Congratulations again to Jay Pasachoff, you surprised us again!

PP 29.12.03

From: Jean Meeus

Certainly Jay did an error. The transit of 1993 Nov 6 was a 'normal' transit of Mercury over the optical solar disk. And it DOES appear in ordinary tables of Mercury transits.

For instance, it is listed (with elements) in my book 'Transits' (Willmann-Bell, 1989) and on page 449 of my 'Astronomical Tables' (2nd ed., 1995). Jean Meeus

From: Jay.M.PasachoffSenl200401williams.edu

Sorry, but I discovered that www.williams.edu/astronomy/sun
doesn't work, and should be www.williams.edu/astronomy/jay/sun.
which is the same as www.solarcorona.net/sun.

Thanks for the great review. Jay

SETalk

Wide field shot

From: Jen Winter - ICSTARS Astronomy To: SOLARE-CLIPSESSenl200401aula.com Date: Thu, 04 Dec 2003 23:57:08

Glenn, The wide-field shot was not digital at all!

It was imaged with a pentax 6x7 film camera using fuji color negative ASA 800 film, a 45mm wide-angle lens (the equivalent of a 20mm on standard format) F/4 at 1/250th sec.

The colors imaged on the film were apparent naked-eye. This is the beautiful color we have been trying to describe the whole time because we witnessed it in the object of our greatest attention: the corona and streamers of the eclipse. The color was visible to many of us naked-eye. Many of the video recordings reflect chatter and comments about the colors and especially the Green.

Lest we remember that the same way different ccd chips capture color differently, different eyes capture and record color differently. Some observers suffer varying degrees of colorblindness in different shades too.

The horizon was also this colorful. We haven't got good scans from the opposite horizon yet. I only clicked one shot with the Pentax and it wasn't scanned at the 1-hour photo. Give me some time and we'll see if we can depict the rainbow of colors from the opposite horizon. jen

From: Robert B Slobins

That will require a drum scan, to permit an enlargement that large. The Imacon scanner can do this.

You may be aware of the Nikon 5000 scanner released everywhere but the US. It provides an advertised expanded dynamic range of 4.8 and a quicker scan time.

Now, there is Photoshop CS that does have significant improvements over Photoshop 7, including the handling of colours and brightnesses.

Now, the above may be off-topic, but the proper rendition of coronal images is not an easy task by any means, and we need all the help we can get!

(I have been thinking of obtaining eclipse images from the mid-19th century to now and digitising them for a possible book. I wonder just how much of this original material there is gathering dust or degenerating. Any interest?) cheers/rbs

From: Glenn Schneider

> It was imaged with a pentax 6x7 film camera using fuji color negative ASA 800 film, a 45mm wide-angle lens (the equivalent of a 20mm on standard format) F/4 at 1/250th sec.

This is an asolutely beautiful image. If you ever get it scanned at really high resolution, I would love to make a large (maybe 5 to 8 ft) print the "long way" on an HP 2500 CP printer I have access to.

> The colors imaged on the film were apparent naked-eye. This is the beautiful color we have been trying to describe the whole time because we witnessed it in the object of our greatest attention: the corona and streamers of the eclipse. The color was visible to many of us naked-eye. Many of the video recordings reflect chatter and comments about the colors and especially the Green.

NOW I understand about the "green" was what you saw, not just an artifact, if as you clearly say the sky color in this image reflect what you saw. Amazing. -GS-

From: Jen Winter - ICSTARS Astronomy

We actually have an HP 5000 of our own in-house at ICSTARS. We recently bought it from Tony Hallas just so that we could be sure that from witnessing the event to print, we could remove any room for interpretation. In our own shop, we can dial around and tweak the settings until we feel it represents what we saw best.

As it's become clear in recent discussions, we stood there and observed something with our eyes that is hard to capture and share without interpretation. We are hoping that with the larger format negs for higher resolution, more definition across a wider field of view, that a large wall-sized print will be able to offer a broader representation of the landscape, horizon, shadow, corona and effects of the eclipse on the environment around. (Perhaps even recognize the people in the foreground.) This was our first attempt at imaging with this field of view on such a large format. We don't have as many shots as we would have liked, but given the circumstances, we're happy to have the number of images we do.

We aren't in any hurry, either to complete the processing. It's something we like to do more slowly and carefully. We will need to scan the images at the highest possible input resolution on the area of the disk and corona, then compile it to create the corona composite inside the large-scale landscape image.

We'll tell everyone when (or if) it ever gets done the way we dream.... jen

SETalk

Umbral Green

From: Jen Winter - ICSTARS Astronomy To: SOLARECLIPSESSenl200401aula.com Date: Fri, 05 Dec 2003 00:10:41

Peeeoople! It's made out of people!!!!!! jen

Glenn Schneider <gschneiderSenl200401mac.com> wrote

>What are those "things" on the rise to the right silluhetted against the much-less >green right-side bright area of the

TSE 2003 IMAGING from the QF 2901 Flight Deck

From: Glenn Schneider To: SOLARECLIPSESSenl200401AULA.COM Date: Sat, 06 Dec 2003 09:31:00

All, You can now find an initial preliminary report on the QF 2901 flight deck solar eclipse imaging program - with a first look at the first results at:

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_03/QF2901_IMAGING/TSE2003_REPORT.html

More will come later. Cheers, Glenn Schneider

P.S. Phil/Gayle. Please feel free to email the above URL to all QF 2901 eclipse flight participants. Additional informatiion, images, etc. will be posted there in the weeks/months ahead.

Reassurance about my request for high rez pix

From: JpdowningSenl200401aol.com To: SOLARECLIPSESSenl200401aula.com Date: Sat, 06 Dec 2003 23:32:08

Hi all, It is always s a good thing for photographers to receive a cautionary note on the use of their images, so Dale is right to give us that reminder. As I photographer myself, I always enjoy getting paid for my photographs, but when I had a chance to use a whole wall at the public library to display my photographs, that was cool, too.

As for any use of the high rez pix I requested, let me assure you that the Denver Museum of Nature & Science adheres to the highest ethical standards and follows every jot and tittle of all copyright laws. Give us a little credit here! Though I did say explicitly that the intended use is for a current events slide show on a projection screen, I probably should have been more explicit in my request in saying that our intended use would fall under a written limited use agreement. I didnâ€™t--and wouldnâ€™t--ask anyone to give away all future rights, and I can assure you that the sort of horror stories that â€œyou will find them for sale in the gift shopâ€• could never happen here.

As for â€œThere is always a budget for display items,â€• there may be in the private sector or in print based outfits such as Sky and Telescope, but itâ€™s just not true in the non-profit sector, especially for an item that will never become part of the permanent collection.

Thanks for the opportunity to clarify. James Downing Space Science Educator Denver Museum of Nature & Science JdowningSenl200401dmns.org jpdowningSenl200401aol.com

P.S. Any resentments I may have inadvertently stirred up are solely my personal mistake and should not in any way be attributed to the Museum.

Eclipse and horizon color

From: Jen Winter - ICSTARS Astronomy To: SOLARECLIPSESSenl200401aula.com Date: Fri, 05 Dec 2003 00:08:10

My wide-field image scans were done in RGB and saved by that lab as .tiff images.

When I color correct scanned images I use a trick that I discovered in trying to color-correct aurora images. I stick to the process, as it took years to discover a way to make the aurora reproduce similarly to what was seen visually. It will, however, only be as acurate as the sensitivity of the film.

- - In photoshop (or any software package that does levels correction) - make a "level adjustment" as follows:

A: Bypass the composite RGB level setting that appears when the level setting first opens.
B: Go instead to each individual color curve. Pull the highlights and shadows (outside triangles) to the exterior end of the recorded color curve.
- Do not modify the mid-tones (middle triangle) because this will change the tint.
C: Repeat this in all 3 colors, Red Green and Blue. - It's sometimes very hard to be patient enough to do this step to all 3 colors. Before all steps are done, the image can appear out of gamut... but stick with it because it's worth it.
D: If the image is darker or lighter in overall contrast, NOW you can return to RGB composite levels and move the midtones triangle left or right to increase midtone contrast. This will, however, give room for personal interpretation of brightness/contrast of the image.

What I personally feel this accomplishes is to accommodate the full range of the data collected on the film curve as it came into the scan. Because all scans and scanners like to modify color balance / as well

SETalk

as CCD chips, it's best to simply let the recorded data represent itself.

With this method, there are no artifacts scanned, miscorrected, or created by the electronic process. What remains is only the tone curve of the film used; and what data it recorded.

- - Try it sometime. It's fun! - - Especially on Aurora shots. Jen

* Tony Hallas and I discussed this issue one night at length and his additional comments were "Don't clip the shadows". In other words, if there's a tiny tail of data at the end of the curve in shadows... leave the triangle outside of the edge. That little piece of data is important.

From: Dale Ireland

Jen I notice the embedded color profile is Apple RGB .... that explains it... :)

Actually it does have an effect. The image seems a lot bluer when imported into a Photoshop program that is set to convert to the common Adobe 1998 RGB Dale

From: Glenn Schneider

Jen Winter - ICSTARS Astronomy wrote: ...B: Go instead to each individual color curve. Pull the highlights and shadows (outside triangles) to the exterior end of the recorded color curve....

This is perfectly fine to do, and what the adjustments for the individual color planes are for. However, as you say:

> What I personally feel this accomplishes is to accommodate the full range of the data collected on the film curve as it came into the scan.

Be aware that Photoshop workes with 8 bit quantized color information per color plane. When you "throw away" intensity levels in any color plane, either high or low end where the is no useful data (e.g., to renormalize the color balance because the film/detector had differential response in each band) - Photoshop does NOT rebin the data interpolated back into 8 bits renormalized. It simply uses the input binning with its 255 levels of original qantization. With that you can, if you have a limited useful dynamic range in one (or more) colors, end up with a color plane image which looks like a series of discrete contours (the eye cannot see 255 steps, i.e., 1/4% in intensity) - but cut that in half and you'll start seeing it. Most distracting in a corona!

This is why I prefer to do all such manipulations with real (not integer) arithmetic - and of course if in the end you want to say anything photometrically quantitative but Photoshop doesn't do that. that goal is somewhat different than producing a pretty picture so use the appropriate tool for the goal of course. But my preference is to do all the image arithmetic outside of Photoshop (in IDL, APL, Transform, or name your favorite) then write out each color plane when I am happy with the data as a TIFF file and import it into the layer R, G, B channels being worked in Photoshop. Photoshop certainly is a great tool for compositing those pre-worked planes and in multiple layers with alpha channels (masks) when needed!

I hope Pat doesn't think this is skewing the topic, but I know many are now playing around with their recently acquired digitized eclipse images. -GS-

From: Glenn Schneider

Dale, It doesn't explain it to me. When I use a color synched Apple RGB profile on an Apple RGB display the horizon still looks green, as Jen says it really was. am I missing something about this? -GS-

From: fabioSenl200401voreas.com

Glenn Schneider writes: Be aware that Photoshop workes with 8 bit quantized color information per color plane. When you "throw away" intensity levels in any color plane, either high or low end where the is no useful data (e.g., to renormalize

For those who don't have access to applications that perform image manipulation using floating-point variables, Photoshop is still a useful tool if used carefully. One can do levels and curves editing in 16-bit mode which reduces the banding. Just convert the file to 16bit RGB, do your adjustments directly (no adjustment layer support for 16bit in PS7, maybe in the new CS version, which I don't have), and use the history mechanism to go back and forth until a suitable adjustment is found.

On a related note, adjusting the individual channels will introduce color distortions no matter what. For aurora images, whose colors are usually all over the map, adjusting individual channels will bring up a more vivid image. For solar eclipses results might vary. I've seen only two total eclipses ('99,'01) and played extensively with image scanning and color correction. The biggest lesson I learned is that color is a very subjective experience, and the whole process of going from film to pixels has many opportunities to introduce color shifts. I've always had problems with negative films, with scanner operators complaining they did their best to adjust colors, and my asking them not to do anything at all.

At the end, it's nice to be able to show off one's photographic prowess, but the only image that matters is the one imprinted in your brain--and that's because you were there. Fabio Redmond, WA

(Continued on page 16)

SETalk

From: Mike Simmons

What about third-party software for TWAIN-compliant scanners? They generally give you far better control over the scanner and results, and often give better default color corrections if you let them do it automatically.

Vuescan: http://www.hamrick.com

Silverfast: http://www.silverfast.com Mike Simmons

From: Jen Winter - ICSTARS Astronomy

I forgot the last thing I've found helps in scanning negs vs. transparencies. (Vic and I have used some 25+ film scanners and most do try to color adjust a neg for you)

If your scanner wants to adjust color for you, to eliminate color correction by the scanner software, you can lie to the scanner and scan it raw (in 16 bit if you want full control) as a slide (color transparency) and it will not make the same color corrections. However, then you have to inverse the colors. (Command I) and your image will now be too cyan. This is how the individual color channel corrections to the captured data on the film can get the tones into an accurate setting.

I need some high res pix of eclipse for museum display

From: JpdowningSenl200401aol.com To: SOLARECLIPSESSenl200401aula.com Date: Fri, 05 Dec 2003 23:42:37

Greetings to all Antarctic eclipse photographers,

Bubbling with enthusiasm, I showed some of the pictures recently posted on members' websites to one of our curators of space science at the museum where I work. We particularly liked the photos in which the Sun seemed to occupy a vanishing point and the umbral edges drew lines to it as if it were a Renaissance perspective drawing. He was very impressed and asked if these might be available for the jumbo screen (an 8 foot by 12 foot rear projection screen) in our recently opened Space Odyssey Exhibitition.

1) Does anyone have pictures with a resultion of 1800 by 1200, pixels or close to it? (It's an odd aspect ratio and we frequently have to modify the format.)

2) Would you grant us permission to show these photos as part of our Current Events in Science Slide Show on the giant screen? (Unfortunately, we have no budget for purchasing your pictures, but of course, we would give photographic credits.)

Thank you, weary travelers one and all for the exiting travelogues and the breath-taking photographs.

James Downing (4 TSE's and counting) Denver Museum of Nature & Science 303-370-8315 jpdowningSenl200401aol.com

From: Dale Ireland

Message Hi all, This sort of "offer" is often made to members of the Astrophotography mailing list. There is always a budget for display items. If you want to give your images away for free that is a choice but don't be fooled. Be very careful about giving up your copyright and display rights especially in a public display. Be sure to sign an agreement limiting use of the images to the specific display or you will find them for sale in the gift shop. Personally I would be very happy to see an image displayed with credit and that would be payment enough but giving up future rights and having the image sold later is another thing. After years of paying nothing for images, Astronomy magazine and S&T are both paying a flat rate for images, not a lot but enough to make it clear that the images and copyrights are not "donated". Dale

From: Robert B Slobins

Dale: Your points are well-taken.

For budget-strapped astronomy society publications, I ask for copies of the issues in which my images appear.

Sometimes the payments are too little to bother with, especially when dealing with other currencies and bank fees. Barter may then be appropriate.

However, commercial usage requires some form of financial payment. You have no idea just how many people want to mooch images, regardless of what it took to obtain and process them.

I am sure that the Winters, with their backgrounds, are quite knowledgeable about what to charge for images. It is difficult to calculate the cost of a display over and above the cost of creating the material, but there are formulas out there. Stock photography agencies are also a good source of information.

If one is a beginner, the free exposure Dale mentioned may well be payment enough. However, as one builds a portfolio and improves on it, then he ought to become more expensive. He can still extend courtesies to those publishers who helped him over time. Continuing a policy of donating images to all comers is not helpful to any creative, especially those who spend fortunes out of their own pockets chasing total solar eclipses!

(Continued on page 17)

SETalk

I recommend granting rights on a single use basis. If a magazine wants to reprise an image, then the editors ought to extend the courtesy of asking permission.

As far as claims to not having a budget to pay for items, that is definitely an excuse. I have had two such incidents over a recent aurora image, and both of these prospective users were absolutely offended that I would request even the reimbursement of expenses. This is typical of the United States. On the other hand, a French magazine requested permission and offered payment in the request. You can guess where my images are appearing.

Come to think of it, any response to this patronising Denver bunch needs to include a fee. That can be negotiated, but a fee must be paid. Do you have any idea how many eyes will be looking at the display, especially during the upcoming holiday vacation season. cheers/rbs

2003 annular eclipse video

From: Sheridan Williams To: SOLARECLIPSESSenl200401aula.com Date: Sun, 07 Dec 2003 14:28:58

As quite a few people were away in Antarctica when I posted this, I'll repeat in case anyone would also like a copy.

Michael Gill emailed the SEML to say: BBC TV broadcast an episode of Natural World entitled "Moon Power" earlier tonight (9-Nov-2003). Included in all the discussions and illustrations of the lunar influence on the natural world, was some gorgeous footage of the 31-May-2003 annular eclipse from the Isle of Lewis, Scotland. I have a copy of the eclipse bit which is about 2 minutes long (file size 750k). If anyone would like a copy then download it here: www.clock-tower.com/eclipse2003/2003A-video.wmv

The full AVI file is 220Mb so if you want that I'd have to post it to you on a CD. Check out the download first because this is pretty good quality. Best wishes

From: Sheridan Williams

People are having trouble downloading the video. Email me off-list and I'll send it as an attachment. Make sure you put 2003 Video as the subject otherwise my spam filter may remove it.

Michael Gill emailed the SEML to say: BBC TV broadcast an episode of Natural World entitled "Moon Power" earlier tonight (9-Nov-2003). Included in all the discussions and illustrations of the lunar influence on the natural world, was some gorgeous footage of the 31-May-2003 annular eclipse from the Isle of Lewis, Scotland.

The full AVI file is 220Mb so if you want that I'd have to post it to you on a CD. Check out the download first because this is pretty good quality. Best wishes

APOD - Congrats, Fred!

From: Jen Winter - ICSTARS Astronomy To: SOLARECLIPSESSenl200401aula.com Date: Mon, 08 Dec 2003 20:44:57

Congratulations to Fred Bruenjes for his APOD picture today! Go Fred! http://antwrp.gsfc.nasa.gov/apod/astropix.html Yours,

Lunar eclipse

From: Jay.M.PasachoffSenl200401williams.edu To: solareclipsesSenl200401aula.com Date: Mon, 08 Dec 2003 21:04:16

Has anybody made a time-lapse movie of a lunar eclipse, about 4 minutes long in total? A museum is looking for such a movie and has contacted me; I am providing them with a solar eclipse. If you can help, please contact me off line: Jay Pasachoff jay.m.pasachoffSenl200401williams.edu

SETalk

Happy Anniversary...

From: KidinVSSenl200401aol.com To: SOLARECLIPSESSenl200401aula.com Date: Thu, 04 Dec 2003 19:04:19

A year has passed since MOST of us have seen a TSE. To those that were lucky enough to be in Africa... Happy Anniversary. Now, we ALL can look forward to 2006!!! Happy Holidays Rick Brown EclipseSafaris

From: Henrik Glintborg

Hi Rick. You forgot ...or Australia! :-) I went there - great! Henrik Glintborg

From: Daniel Fischer

Why look forward to 2006? The 2005 totality section of the hybrid eclipse is *at*least* as accessible as the Antarctic eclipse was this year - and, if we do it right, also at a lower price. My vision is a cruise ship leaving San Diego, going straight into the zone and back, in perhaps one week (speedwise that should be possible), without any land visits (as there is no dry land in the area anyway :-). Setting off from the U.S. would make it rather easy (I suppose) to fill the ship with eclipse enthusiasts, and thus the overall cost could be quite (?) low. But how do you get started such a project? Or is someone already working on it??? Daniel

From: Matthias Graner

I have been thinking about Acapulco as port of embarkation for the 2005 HSE. Acapulco is much closer to the central line. However, San Diego might also be a good idea as eclipse chasers from the US would not have to worry about squeezing their equipment into an airplane to get to Mexico.

I am waiting for some information from Glenn Schneider. As he wrote a few days ago:

> For those seeking totality from 8 April 2005 a ship is definitely in order. Stay tuned...

I am staying tuned!

From: Sheridan Williams

I think Daniel Fischer's suggestion is excellent. If any company is thinking of organising a cruise please put me down for two places.

From: Glenn Schneider

Daniel.

Daniel Fischer wrote: Why look forward to 2006?

WHAT?!! It should be a great eclipse!!!

> The 2005 totality section of the hybrid eclipse is *at*least* as accessible as the Antarctic eclipse was this year ....

Daniel: PLEASE stand by with a bit of patience, I am working on this collaboratively and have been perusing this with incremental steps toward maturity for about a year. Plans which are maturing are not yet 100% so we have not gone "public" yet with any details. Time required for both myself and my partner in working this plan was usurped temporarily by TSE 2003, but not at all derailed.

I can say it will be a ship, it will be in the Pacific ;-) and it will - if the weather co-operates - will be be in totality! I promise more as soon as we can say something as soon as we have a firm commitment. The planning and logistical effort for this is being done with the same attention to detail as was for QF 2901 and the Novo expeditions. -GS-

(Continued on page 19)

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From: Crocker, Tony (FSA)

Distances to 2005 eclipse (30 seconds total at 0.33S 108.17W). I chose this point because points closer to Central America have much worse weather prospects according to Jay Anderson's weather map http://home.cc.umanitoba.ca/~jander/tot2005/aprilcloud05lr.png. Add another 200+ miles for the optimal weather point on the map with 35 seconds totality.

Galapagos 1187 miles
Acapulco 1318 miles
Costa Rica 1701 miles
Panama 2077 miles
San Diego 2359 miles

By checking Hawaii to California timetables on cruise sites, I determined average long distance cruise speed of 22mph for Celebrity Infinity (typical modern cruise ship) and 27mph for the built-for-speed Olympia Explorer. So only Acapulco and maybe Costa Rica work for a one-week eclipse only cruise. But I suspect a diversion from a typical 2-week Panama Canal itinerary will be more commercially viable.

From: Gerard M Foley

I have no reason to challenge your speeds for the ships you name, but most cruise ships are limited to about 18 knots, because they rarely have any need for speed and always need economy. It will be very interesting if someone can find a ship to go there. Gerry

From: Crocker, Tony (FSA)

19.1 knots = 22 mph And I used actual times specific ships left Hawaii and arrived California to calculate speed rather than advertised ship specs.

Solar Watch

From: davidSenl200401starfield.com.au To: SOLARE-CLIPSESSenl200401AULA.COM Date: Fri, 12 Dec 2003 This may seem like a strange request, but I'm after a good wrist-watch in keeping with the eclipse-sun-solar theme. I'm after something that can list both UT and local time, solar powered, and preferably under $250USD. The best watch I've found that fits this description is the Casio G-SHOCK G-7000D-8V, but it's so big and bulky I'd worry about wacking people with it. Any suggestions for a watch with a little bit more style? Given the nature of this email, please send all replies directly to my email address, not the SEML.

CALIBRATED CCD IMAGES FROM QF 2901 FLIGHT DECK... AND SOHO

From: Glenn Schneider Date: Mon, 08 Dec 2003 23:07:13

All, I realize I owe many of you off-SEML personal email replies from you eclipse related correspondences and data/image transfers over the weekend. I must leave for Baltimore at the crack-of-dawn on non-eclipse business, and thought it best to try to actually get some eclipse image processing work completed before I have to leave rather than just talking about it.

For your consideration and viewing pleasure:

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_03/QF2901_IMAGING/CALIBRATED_WEB_IMAGES/TSE2003_CALIBRATED_CCD.html

I'll be "off the air" for several days. Sorry about that... Glenn Schneider

From: Glenn Schneider

Hi Jay, I've been dancing as fast as I can, and just managed to finish the reduction of the 40 ms CCD data - quit happy with that I must say, and you can see a summary I also went "public with via SEML at:

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_03/QF2901_IMAGING/CALIBRATED_WEB_IMAGES/TSE2003_CALIBRATED_CCD.html

You will find (with a critical eye) this improved over the uncalibrated images (good thing!). and, I have redone the QF2901 + SOHO image which you can see there as well. that should take precedence over the first iteration.

I don't actually think that would be much improved quantitatively, but opened ro compositional suggestions.

Have to run, though. I will be out of touch likely until thursday - have "real" work to tend to, -GS-

From: Daniel Fischer

Dear Glenn, might I use one of the Schneider/LASCO composites in a little German astronomy newsletter I'm publishing? I've been doing similar experiments in 1999 - see http://www.astro.uni-bonn.de/~dfischer/bul99/mergers.html - though not as precise. Regards, Daniel

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Qantas Eclipse Flight

From: Michael Gill To: "SOLARECLIPSESSenl200401AULA.COM" <SOLARECLIPSESSenl200401AULA.COM> Date: Wed, 10 Dec 2003 14:25:20

Here is an account by Paul Maley of his QF2901 experience that I have not seen mentioned on the SEML or on the 2003 eclipse links page (http://www.eclipse-reisen.de/2003/links.htm): http://www.eclipsetours.com/rofe29.html Cheers, Michael Gill

From: Glenn Schneider

I very much enjoyed Paul Maley's account of his QF 2901 experience, and images now on the web. I am very sorry I didn't have a chance to meet and speak with him on the flight. I feel the need, however, to comment about one item. I do not have his email address. Can someone on SEML forward this to him? Paul, on his web site said:

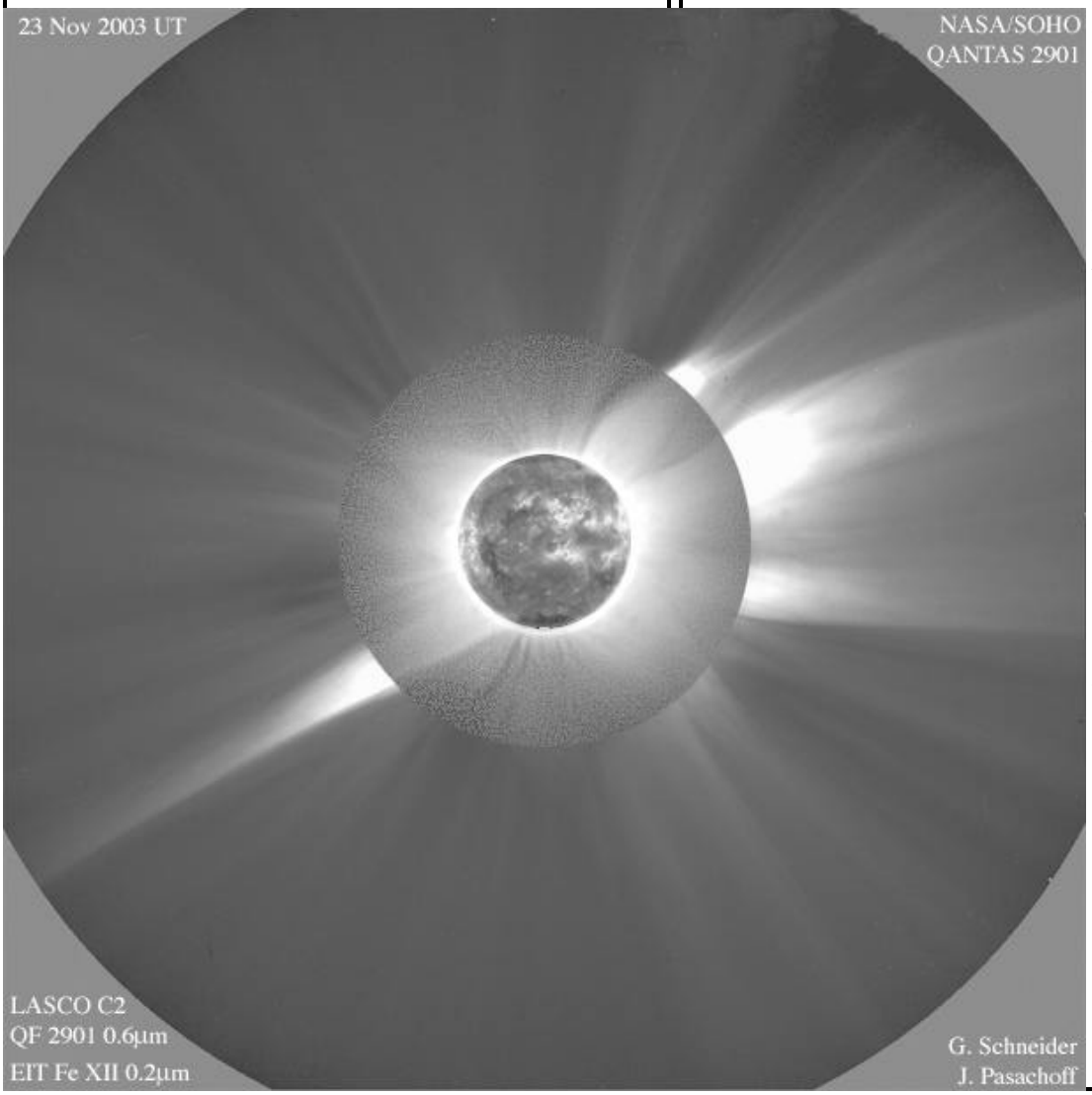
"There were voice announcements with the countdown to second contact. Oops, no contact! Then another countdownýagain, no second contact. Finally about 16 seconds after the first warning the diamond ring was seen and totality really began."

That was me doing the countdown. The frist was NOT to second contact, but as intended, was to the most up to date prediction (from last winds-aloft correction done at 8 minutes before mid-eclipse) of 15 seconds BEFORE second contact. This "fist" countdown was intended to provide a mark to less experienced eclipse chasers as to when it would be safe to remove solar filters from cameras, etc. I am 100% sure I had said that in either the pre-eclipse briefing I gave over the in-flight entertainment system, or as we lead up to that event, or both. If someone has an audio recording of what was announced that should be on it. The SECOND countdown was indeed to be to the CII diamond ring. Paul says above that was 16 seconds after the first "warning" (I actually thought it was a bit later, but am not in a position to verify that at the moment), which means it was one second early w.r.t. complete photospheric extinction. As I had also noted in the brief, and also in the mission planning document available at:

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_03/QANTAS_MISSION_PLAN.pdf

I expected an uncertainty of +/- 6s (one sigma) on hitting the contatcs w.r.t. U.T. due to limitations of the flight managment system and uncompensated variation in wind speed/direction. So I would say we hit it right on the money.

I would appreciate it if Paul could correct this, "for the "record". Cheers, -GS-



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Antarctic Video Compilation

From: Jen Winter - ICSTARS Astronomy To: SOLARECLIPSESSenl200401aula.com Date: Wed, 10 Dec 2003 20:22:49

David, I'm glad to hear you made it home safely. The Khlebnikov group has been quiet and I am excited to hear posted reports from the Icebreaker.

We had a lot of video from the Novo program. Naturally, you already know about the NHK team. They sold their video lead to Discovery Channel Canada. I have friends at NHK who may be able to organize some additional footage from team members. We could only expect to have access to private video by videographers, because NHK would not allow them to release film shot on their $.

Likewise, we had some great footage shot on our trip. Some of our own, Mendenhall, Bruenjes and several Japanese clients too.

Prof. Jim Huddle (from this group) also just sent us an absolutely GORGEOUS 11-minutes of video. We viewed it last night and I have to comment on it. The video had 3 features I can't get over.
- First, his flash spectrum was phenomenal! I have never seen this imaged in such a way. A few of us viewed the tape in our hotel in CPT one night, and the gasps of excitement literally drew a crowd with other chasers coming running from their rooms to see what the excitement was about. We looked closely at the spectrum and noticed that the appearance of the white transmission line bands coincides just about perfectly with the last peek of diamond ring into totality.

- Then, he captured almost a minute of shadow bands... just how they looked to us on the ice. Much the same as when we stood and looked at the ice during the eclipse, we viewed Jim's tape and didn't know what we were expecting or looking at, so there was a moment to gaze at them and wonder "what on earth is that? ... Oh, WOW! They're shadow bands! ..." and they continued long enough to get a good look at them and examine them. This really depicted what the experience was like to observe them there very well.

- Finally, as he zoomed-in tight on totality, Jim's video really impressed on me a lot of the bizarre and monumental feeling we had standing there looking at totality. His tape revealed a vivid GOLDEN inner corona with hints of red to the bottom. Not only that, but the audio revealed the harsh increase in wind that accompanied the event; as well as a sight I can't get out of my mind... The swimmy pair of disks literally boiling there - poised on the edge of the earth... The power of the boiling sun in oranges and red was more flame or lava-like with fluid motion in the moving video - The fact that it stood just touching the horizon mentally depicted the incomprehensible geography where we traveled to - in an effort to reach its umbra ... and bask in it..... WOW..! ! !

I put Jim's video at the all-time top of my list of best eclipse footage ever to capture the effects and feeling of an eclipse. Thanks, Jim. * I also liked the way he captured takeoff and landing in the IL-76. They played a live video feed from the nav-pit on a projection screen. We all loved it imensely and I had almost forgotten. Good to hear the roar of the engines on take-off and feel feel the anticipation of touching down as we watched the runway indicators race by. Clear skies, jen

SOHO+QANTA (was: Gone for a few Days)

From: Glenn Schneider To: SOLARECLIPSESSenl200401AULA.COM Date: Wed, 10 Dec 2003 16:59:03

Daniel, Jay, et al., I am still working on final calibrations of our images. I am on travel to Baltimore and will get back to that in earnst in a few days. Happy to have you use one after that. I have not settled on ultimate form, and will be iterating with Jay P. For you, Jay and other, here is a slight different transfer to bring out a bit more of the higher frequency detail in the coronal structure:

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_03/QF2901_IMAGING/QE_RENORMALIZED_TEST1.jpg

Still a few artifacts to take care of (Jay, I will talk to you off-SEML , and expect different display strategies as well in final image. When seamed, as that is, with the SOHO image currently available it looks like this (update from earlier):

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_03/QF2901_IMAGING/QANTAS_SOHO_TEST1.jpg

Ultimstely I cannot get a proper joining from the public release SOHO image because of differences in display transfers, dynamic range clipping, filtering, etc. I intend to request the original image data so from the SOHO archive so I can work with those quantitatively on the same footing as our CCD images. Cheers, -GS-

My paper on maximum duration of TSE

From: Jean Meeus To: Solar Eclipses <solareclipsesSenl200401aula.com> Date: Wed, 10 Dec 2003 07:29:12

I am happy to announce that my article 'The maximum possible

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duration of a total solar eclipse' has been published in the December 2003 issue of the 'Journal of the British Astronomical Association' (vol.113, No.6, pages 343-348).

The method of calculation is explained, and the values for the years -2000 to +7000 are given. The calculation was made separately for eclipses near the ascending and near the descending node. Before the year 1248, the maximum possible duration took place at the descending node. From A.D. 1248 on, the maximum occurs at the ascending node.

Here are these theoretically possible maxima, as found by me :

Year at asc.node at desc.node
min. sec. min. sec.

-2000 7 07.3 7 29.6
-1000 7 18.9 7 34.5
0 7 27.3 7 35.9
+1000 7 31.7 7 33.4
2000 7 32.1 7 27.0
3000 7 28.7 7 16.9
4000 7 21.9 7 03.8
5000 7 12.7 6 48.6
6000 7 03.1 6 32.4
7000 7 01.7 6 32.6

Interested persons wishing to obtain a copy of the article (a 'pdf' file) by e-mail, FOR THEIR OWN PRIVATE PURPOSE, *not* for reproduction, may contact me directly at jmeeusSenl200401compuserve.com. Jean Meeus

From: eclipseclatSenl200401comcast.net

Dear Jean: When you mentioned back in November 2002 that you had revised the duration from 7:31 to 7:32 I realized that I had not in fact picked the optimal conditions for the max theoretical duration.

I had selected the day (basically July 4 present epoch) when Earth's axis is inclined at 5.15 degrees (Moon orbit inclination) making site movement parallel to the Moon's motion. I then iterated to find the best compromise between speed (candidate site near equator) and shadow size (site near Earth's bulge closest to Moon). Result 7:31

It occurred to me when you revised the theoretical duration that I also needed to compromise on the date itself. Turns out that 3 days later when the Earth's axis is tilted at 6.4 degrees, although the site is now not parallel in motion to the Moon, since the bulge then lies a bit closer to the Earth's equator a slightly greater duration is achievable. My result 7:32.3 (Slightly higher than your result but I defer to you since I have a plus/minus accuracy of approx 0.2 seconds primarily due to lunar angular speed in my program)

Thank you for laying this issue to rest. I feel like making up some T-shirts with your likeness on front, saying "7:32, not 7:31" Send me photo of yourself and I will do it.

Also good timing, Jean, a fitting tribute to a Happy 75th Birthday to you this Friday (along with Beethoven...disagreement between Dec 12 and 17 for Ludwig.) I feel honored to have a birthday near yours...plus 20 years minus 4 days

So PLEASE do send me a copy of your pdf file on this issue, I will cherish it. Most sincerely, Raymond Brooks eclipseclatSenl200401comcast.net

From: Jean Meeus

I send my article on the maximum possible duration of a TSE, as a pdf file, to 12 persons, but at least three of them didn't receive it.

I don't know what happened. The sending seems to have been normal, and I didn't receive any error message.

Sorry, but it's not my fault. I will try to send the file again during the next days. Jean Meeus

From: Felix Verbelen

Beste Jean, Interested persons wishing to obtain a copy of the article (a 'pdf' file) by e-mail, FOR THEIR OWN PRIVATE PURPOSE, *not* for reproduction, may contact me directly at jmeeusSenl200401compuserve.com.

Zoals alles wat verband houdt met het onderwerp "verduisteringen", zou ook een kopie van uw nieuw artikel zeker welkom zijn. Alvast bij voorbaat bedankt. Beste groeten. Felix

From: Georg Lenzen

Dear Jean, I didn't receive your article either. Regards, Georg

From: Timo Karhula

Dear Jean, Thank you for the table of the maximum possible duration of TSE's during different epochs. When using the figures below, it seems that there was an instant, sometimes between the years -1000 and 0, when the duration was at the absolute maximum, >7min 35.9s. Do you know when it occurred and how long was the (theoretical) duration?

>Year at asc.node at desc.node

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> min. sec. min. sec.
>
>-2000 7 07.3 7 29.6
>-1000 7 18.9 7 34.5
> 0 7 27.3 7 35.9
>+1000 7 31.7 7 33.4
> 2000 7 32.1 7 27.0
> 3000 7 28.7 7 16.9

Best Regards, /Timo Karhula

From: Jean Meeus

Felix, Er schijnen moeilijkheden te zijn. Ik heb mijn pdf file naar 12 personen gestuurd, maar niemand schijnt die ontvangen te hebben.

Toch leek er niets abnormaals te zijn bij het verzenden, en ik heb ook geen error-melding gekregen.

Ik kan zelf geen pdf files maken, maar dat van mijn artikel werd mij als pdf file opgestuurd door de Editor zelf van het BAA Journal, en die file kan ik openen en probleemloos lezen.

Mijn schoonzoon komt zondag langs en dan zal ik hem vragen om eens naar de zaak te kijken. Tot dan moet ik wachten. Dus een beetje geduld. Ik kan er ook niets aan doen. De beste groeten. Jean

From: Jean Meeus

Timo Karhula wrote : Thank you for the table of the maximum possible duration of TSE's during different epochs. When using the figures below, it seems that there was an instant, sometimes between the years -1000 and 0, when the duration was at the absolute maximum, >7min 35.9s. Do you know when it occurred and how long was the (theoretical) duration?

>Year at asc.node at desc.node
> min. sec. min. sec.
>
>-2000 7 07.3 7 29.6
>-1000 7 18.9 7 34.5
> 0 7 27.3 7 35.9
>+1000 7 31.7 7 33.4
> 2000 7 32.1 7 27.0
> 3000 7 28.7 7 16.9

The maximum was 7 minutes 35.9 seconds, about the year -120. Further into the past there must have been epochs when the maximum possible duration was still larger by reason of the still larger value of the eccenricity of the Earth's orbit, but for those remote epochs I cannot calculate it because the available planetary and lunar theories are no longer valid. Jean

From: Chris Malicki

Dear Jean, I also did not receive the file Regards, Chris Malicki

Canadian Discovery Channel Video

From: Sheridan Williams To: SOLARECLIPSESSenl200401aula.com Date: Wed, 10 Dec 2003 09:50:54

I was hoping to get a copy of the Discovery Channel Video broadcast in Canada sent to me in England so I could let others have a

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copy on VCR or DVD. Unfortunately it appears that the copy is very poor quality and probably not worth duplicating.

Does anyone else have it recorded who would be willing to let me have the original (or a very good copy) to let others have? Failing this, does anyone in Canada have any contacts with the Discovery Channel so I can approach them directly? Best wishes

From: David Makepeace

I know the people at Discovery. They interviewed me via satellite phone on this live 2-hour special program while I was standing on the ice shelf prior to totality. I have a copy coming to me and have good quality off-air recordings as well. Sheridan - contact me off list.

On the same subject - while gathering visual material for a video about this eclipse, I was asked if I would be willing to compile a comprehensive video/DVD of still images and video from the unique TSE of 2003 to commemorate humanity's first glimpse of the corona from Antarctica. This was Daniel Fischer's idea and I have agreed to do the work. I have a number of contributors already from my marine expedition on the Khleb., Glenn S. and Joel M. are lending images from the Qantas flight, and I am looking for additional material from anyone who was in the path of totality this time. Jen Winter - is there any video from Novo? Would anyone else like to archive their images in this collection?

Contact me off list for details imoonSenl200401eclipseguy.com Best, David Makepeace UmbraLog 1355 Toronto, Canada http://www.eclipseguy.com

From: Jen Winter - ICSTARS Astronomy

I talked to Ivan S. (The gentleman who appeared in the special) about getting a copy. He indicated that while he could not send an HDTV version as it was originally broadcast, that his video department would be sending us a copy here.

I wouldn't expect to see it very soon. We find from experience that these requests are slow in coming. News crews are never as excited as we are to distribute copies of our amazing story... and they always have more pressing deadlines.

Our last CNN International special footage request took almost a year to get back. We were seen on in-flight entertainment aboard a Delta airlines flight before we saw it ourselves! Clear Skies, jen

From: Daniel Fischer

Talking about the Discovery/NHK tape - here's a suggestion: Could we (i.e. Patrick :-) ask the Canadians for permission to show the tape (or at least the hot minutes around totality) in full HDTV quality at the solar eclipse conference next August? I was impressed by their AV equipment (they have, e.g., the best video beamer I've ever encountered) and thus fully expect them (Barry? Am I right?) to have the possibility of showing HDTV-NTSC tapes as well ... Daniel

P.S.: There is more stunning astronomy 'available' by NHK in HDTV, by the way - e.g. they carried intensified HDTV cameras on planes chasing the 1999 Leonids storm and got marvellous material which was once shown (only in normal TV resolution, though) at a meteor conference in Tel Aviv in 2000. I understand that the Japanese tend to ask for humongous fees when you want to buy their material, but it may be easier when it is strictly for display at a major scientific meeting. And here, going through Canada may make things much easier, even language-wise :-)

From: solareclipsewebpagesSenl200401btopenworld.com

Indeed we can plan it in the program of SEC2004. The equipment in the Open University is indeed excellent. PP

From: Jean Marc Larivière

Patrick, Daniel, The planets seem to be aligning nicely. Needless to say, I will be cataloguing the Discovery Channel/NHK show in the Eclipse Film Database. I also intend to show clips of different films during my talk on this subject at the SEC2004. As it hap-

(Continued on page 25)

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pens, David Makepeace, who has already said he would be getting in touch with his contacts at the Discovery Channel, here in Canada, will be giving me a hand with the preparation of the audiovisual portion of my presentation. Therefore, provided that we get permission, I would be glad to integrate the screening of the NHK footage in my presentation. If that is suitable, Patrick, we can discuss the logistics off-line. Jean Marc Lariviere

From: Jen Winter - ICSTARS Astronomy

I have forwarded the request to Discovery Channel Canada to hear their opinion.

We'll see what they say. jen

From: Jan Sládeèek

All, I look forward to the program SEC 2004 and also to pictures of TSE 2003 (Discovery/NHK and other). In Czech Republic TV Prima broadcast some pictures from NHK in the short visual document (4 min.) about Qantas Eclipse Flight 2901. Regards, Jan

From: solareclipsewebpagesSenl200401btopenworld.com

Jean Marc wrote: .../... Therefore, provided that we get permission, I would be glad to integrate the screening of the NHK footage in my presentation. If that is suitable, Patrick, we can discuss the logistics off-line.

Wonderful if you integrate it in your presentation on the Friday night of the international Solar Eclipse Conference SEC2004 next August. If you need to change your abstract, please let me know.

To all, Make sure you are registered (and paid) for the conference. Places are limited to 300 attendees (including speakers)!!! First paid/registered, first served ... PP

Lots of updates and Novo pix

From: Jen Winter - ICSTARS Astronomy To: SOLARECLIPSESSenl200401aula.com Date: Fri, 12 Dec 2003 10:20:57

Ok.... - I just found out that Vic has been busy all day compiling more images and trying to make sense of the pictures and links we have.

Main directory of images and information: http://icstars.com/Antarctica/Eclipse2003.html

New slideshows: On The Ice - The Journey From Cape Town to Antarctica and Back! http://icstars.com/Antarctica/OntheIce/index.htm

Post Eclipse Celebration Dinner & Herschel Observing http://icstars.com/Antarctica/PostEclipse/index.htm

I hope everyone likes them! Clear Skies, Vic & Jen

From: Juan Pedro Gomez Sanchez

Dear Jean CONGRATULATIONS, the number one,,, " Astronomical Tours",, Sincerrely,

More Corona from TSE2003 / QF2901

From: Glenn Schneider To: SOLARECLIPSESSenl200401AULA.COM Date: Sat, 13 Dec 2003 09:27:44

All, For your reading/viewing pleasure (or at least entertainment) see again:

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_03/QF2901_IMAGING/TSE2003_REPORT.html

which has been updated with "new and improved" imagery and explanatory text, and starting to get organized. (Be sure to flush/reload if you have been there before). There will indeed be more, but thought some here would be interested at the current content. Cheers, -GS-

From: Robert B Slobins

Glenn: With film, I am able to go to a darkroom enlarge a negative, calibrate the print, and get similar results with a burning mask or masks of corrugated cardboard. The cardboard has cutouts of a circle or ellipses roughly corresponding to the isophotes of the approproate region of the corona.

Sunspot minimum coronae are more complicated to print, as although the inner corona is still rather round, the middle and outer portions are elliptical. It takes much longer to make the enlargement than the original totality, except for 1991. ;-)

For an example, please see the article on this recent eclipse in the November 2003 issue of Astronomy.

However, this works best if one has access to a professional chemical darkroom, and that generally renting one in a place like New York City for an eight-hour stretch. Adding in the cost of paper and the rental and the transportation and parking, we are talking at least $100, and possibly $200 per day. It is clear that the computer is the most cost-effective way to produce these images.

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Now, I would like to see if we can take our own negatives, and the negatives and plates of past eclipses and comets back to the 1880's for that matter, that have emulsions that record these images with a very wide latitude, and produce similar results with similar methods from a high quality scan. I am thinking such 'data mining' may be of value.

(My 1994 eclipse negatives apparently fill much of the frame with corona. I used 300 and 400 mm lens; the polar streamers are visible in prints that I back light. I am sure that others' images are similar.)

I wonder if a similar method to yours can be found and applied. What I see here is a more natural rendition of the corona, closer to what the human eye sees. I was never a fan of radial gradient filters used on the corona. Of course, that should not be understood as devaluing them, as I am sure that such images are of much scientific value. cheers/ rbs

2000 Observing Guide

From: Jay.M.PasachoffSenl200401williams.edu To: solareclipsesSenl200401aula.com Date: Sun, 14 Dec 2003 18:19:28

Does anybody have an old RASC Observer's Guide from 2000, including the 2000 eclipses, that they can spare? Please contact me off line at pasachoffSenl200401williams.edu if so. Thanks. Jay Pasachoff

Astronomical Definitions

From: Nicki Mennekens To: SOLARECLIPSESSenl200401AULA.COM Date: Mon, 15 Dec 2003

Dear all, Recently I read a rather awkward article on http://www.space.com/scienceastronomy/mystery_monday_031215.html concerning the definition of the astronomical terms 'solar system', 'planet' and 'moon'. I didn't know there was any discussion about this.
I always thought that a system of objects rotating around a star was called a stellar system (even though this is not a common term, it does exist and seems the most logical), with special names if the star has a name, e.g. solar system for our star Sol. These primary objects rotating around the stars are then called panets. Things still rotating around these planets are satellites. There is only one astronomical object called Moon: the single natural satellite of planet Earth. Anyone with a different opinion? Nicki Mennekens

Coordinates of 2003 totality

From: Sheridan Williams To: SOLARECLIPSESSenl200401aula.com Date: Mon, 15 Dec 2003 11:16:53

I am trying to compile a set of pushpins for exact locations where the 2003 TSE was viewed. Would observers please email me (off list please to sheridanSenl200401clock-tower.com) their latitude and longitudes where they were.Obviously moving platforms such as planes will not have exact locations and the approximate lat and long will suffice.

From: Glenn Schneider

Hi Sheridan, Replyin on-SEML as some others may have interest.

For QF 2910 (QANTAS/Croydon flight) there really is no question as to where we were. I soon will be getting the actual flight data telemetry and we should be able to nail that with an uncertainty of 10 meters along the track, but of course we were moving and our position changed during our 2.5 minutes of totality. Being very cautious, as I do not yet have the final position data in hand yet, I can give you our mid-eclipse (22:44:00 UT) position quoted to the nearest tenth of arcminute in Lat and Long, but there is an uncertainty in that of as much as +/-200 meters at this time, which will be greatly improved once I have the final flight data from QANTAS. That is:

Latitude = 69d 58.7m S
Longitude = 93d 00.7m E
Altitude = 35,000 ft +/- 20 feet

A couple of caveats. The Boeing 747-400 is 70.7 meters long from nose tip to the furthest aft point on the trailing edge of the tail. The furthest forward sunside window is in the first class lavatory on the lower deck. The distance between that bathroom window (which was used, and I have a copy of a video taken from there by one of the cabin crew) to the last window at the back of the passenger cabin, which is in an emergency exit door, and was also used is appx. 55.1 meters - so to the precision which we will know the absolute location of the aircraft (from its measured fiducial point) will actually depend upon WHERE in the aircraft any person was. Indeed, the person occupying the window at the back of the airplane experienced second and third contacts about one twentieth of a second before the person in the first class bathroom. I say "about" because while the person at the back got to see it "first", the one in front saw a very slightly (milliseconds) longer totality, by virtue of being closer to the point of maximum eclipse. This window is actually 4.2 meters ahead of the pilot's left wide window, so the "longest" eclipse seen on QF 2901 actually did not go to Captain John Dennis - but I think we are splitting hairs. Of course, he was higher up (being on the second level) so slightly closer to the moon (the 35,000 ft is measured from the bottom of the wheels, if they were to have been deployed - which most assuredly they were not). -GS-

SETalk

TSE2003 Philately

From: Glenn Schneider To: SOLARECLIPSESSenl200401AULA.COM Date: Sun, 14 Dec 2003 15:59:51

A couple of notes of interest from non-SEML subscribers to forward:

1) Steve McLachlan (New Zealand) has put together a very nice collection of commemorative post cards of TSE2003 observations from across the path in Antarctica. His web page may be viewed at:

http://www.newzeal.com/theme/antarctic/Solar/Eclipse2003.htm

2) Steve Kolodny (California) has put together a photo album from QF 2903 - many "people pictures" included:

http://www.ofoto.com/I.jsp?c=3k5f7vxj.7rmdzs6f&x=1&y=jnryxd Cheers, -GS-

From: Bevan Harris

Sorry to be picky Glenn, but the term for the collection and study of postcards is deltiology. Philately is still a valid term, however, as it includes the study of postmarks. ;-)

Regardless of the correct term, that's an enviable collection of Antarctic commemorative postal items. I've long held an interest in Antarctic philately - uh deltiology - ah what the heck! Cheers, Bevan

From: Glenn Schneider

I stand corrected. Thank you Bevin. But so as not to detract others with more general philatelic interest, I should not also that he also has on that page commemorative covers, appropriately chosen stamps (commemorating the Antarctic) and post marks. He has updated the page sine my first posting about it: http://www.newzeal.com/theme/antarctic/Solar/Eclipse2003.htm Glenn Schneider

First annular eclipse account?

From: Timo Karhula To: SOLARECLIPSESSenl200401AULA.COM Date: Fri, 12 Dec 2003 11:58:10

Hi group, Total solar eclipses have been known to mankind for millennia. But when did people recognize that some of the central solar eclipses were annular? Clearly, most people were not aware of or could not understand why it got (slightly) darker when an annular eclipse was in progress. By looking directly at the sun, it was still blindingly bright. When does the first, unambiguous account of an annular eclipse appear in the chronicles? Regards, /Timo Karhula

From: KCStarguySenl200401aol.com

Timo " the sun assumed the shape of a crescent and became full again , and during the eclipse some starsbecame visible" Thucydides (greek c4690499 BC) refers to an annular solar eclipse of august 3 (29 July) 431 BC,

that is the earliest one I see, However it says there some stars that came out. Has anyone seen stars come out during recent annular eclipses? Dr. Eric Flescher (kcstarguySenl200401aol.com)

From: Robert B Slobins

Eric: I recall seeing Venus in 1984. For a large-magnitude annular eclipse, I am sure that the 'stars' Venus and Jupiter and possibly Mercury at greatest brilliancy can be seen. Also remember that the levels of air pollution could have been lower then than now (Africa in June notwithstanding!) cheers/rbs

From: barr derryl

SETalk

Timo and all: Might I suggest that you look into Stephenson's Historical Eclipses and the Earth's Rotation. Although not the main topic of his volume, Professor Stephenson does provide excellent information pertaining to the type of eclipse that occurred and observers' description there offor all or nearly all chonicled eclipses prior to the invention of the telescope. Several of his book's entries are relevant to your question regarding early observation of annular eclipses. A couple of them are: on page 404 he quotes an observer from Orkney, Scotland, on 1263 August 2 as describing an annular eclipse thus, " . . a great darkness over took the Sun so that a little ring was bright round it on the outside." Additionally, the annular eclipse of 1292 January 21 is described by a Chinese observer on page 258 as: "A darkness invaded the Sun, which was not totally covered. It was like a golden ring."

While these references are clearly descriptive of annularity, Professor Stephenson elsewhere in his volume cautions readers to be aware that possible references to annular eclipses might well be masked in terminology. Many eclipses that we today are aware were annular are described by contemporary observers as "almost complete," "not complete," and "like a hook." All terms which could be applied to annular eclipses in various stages or locations of observation. However, it is my personal opinion that few annular eclipses presented the confusion you suggest in your message. First of all, many chronicled eclipse sightings in all ages of human eclipse observation report on partial rather than total eclipses. Secondly, our ancestors were far more clever about figuring out eclipse cycles and occurrences than we are inclined to think. And their observations and reports of those observations, while often lacking the data we want for exact location and time, give us details that vividly reveal what the observers saw. It is commonly believed that Romans observed eclipses as reflections off dark liquids. In fact it was reported to this List in 1999 that the French had vinted a special dark wine to function in this capacity for the August 11 eclipse of that year. Surely other techniques for observation that are now unknown to us were also used. Eclipse observations from even the most remote times speak clearly about 5/12ths, 7/10ths and so on of the solar face being covered. For the most part, when location and time of the eclipses in question are known, computer replications of these eclipses have verified the respectful accuracy of the ancient observers. However, certainly few descriptions of ancient annular eclipses have come down to us that clearly signal annularity to our understanding. Perhaps the observation of an annular eclipse by no less an astronomer than Christopher Clavius on 1567 April 9 in Rome best sums up ancient humanity's unfamiliarity with the "ring of fire:" "The other (eclipse) I saw in Rome in the year 1567 also about midday in which although the Moon was placed between my sight and the Sun it did not obscure the whole Sun as previously but (a thing which perhaps never before occurred at any other time) a certain narrow circle was left on the Sun, surrounding the whole of the Moon on all sides [Clavius (1593, p.508]" as quoted by Stephenson, Historical Eclipses and the Earth's Rotation, p. 410. Best Regards, Derryl Barr

From: Timo Karhula

Dr. Eric Flescher (kcstarguySenl200401aol.com) wrote: " the sun assumed the shape of a crescent and became full again , and during the eclipse some starsbecame visible" Thucydides (greek c4690499 BC) refers to an annular solar eclipse of august 3 (29 July) 431 BC,

This observation does not rule out a very deep, but not necessarily an annular eclipse. Derryl Barr mentions an unambiguous account: on page 404 [of Stephenson's Historical Eclipses and the Earth's Rotation] he quotes an observer from Orkney, Scotland, on 1263 August 2 as describing an annular eclipse thus, " . . a great darkness over took the Sun so that a little ring was bright round it on the outside."

>that is the earliest one I see, However it says there some stars that came out. Has anyone seen stars come out during recent annular eclipses?

I found Venus and Jupiter naked eye during the ASE of 1999 in Western Australia. /Timo Karhula

From: Robert B Slobins

Eric: You need to remember that these chroniclers of old were reporters and journalists, and you know how these people are about astronomy.

I would expect that the professional astrologers would know the general positions of planets back then. The rest of the people, uneducated and uninformed, would call any point source of light a star. cheers/rbs

(Continued on page 29)

SETalk

From: KCStarguySenl200401aol.com

Tino A description with a bright ring is more descriptive but august 3 (29 July) 431 BC, might still be the earliest. Others might find something and maybe Patrick may see something in the July calendar. Of course an early description might have had said "star" eventhough it was a planet (as the cast of the one in 1999 you saw. I saw Venus in 2001 (it is on my video and image that I took that was taken in Astronomy in 2001 as well as sign Venus in 1999). But has anyone ever seen Sirius or a bright Star , not planet during

Report from the Khlebnikov

From: David Makepeace To: SOLARECLIPSES-Senl200401aula.com Date: Tue, 16 Dec 2003 20:52:49

If anyone is interested in seeing some photos from the recent TSE expedition aboard the Kapitan Khlebnikov I have posted a brief report on my site.

http://www.eclipseguy.com ... and follow the link to the Antarctica report. Enjoy! DM. -- David Makepeace UmbraLog 1355 Toronto, Canada http://www.eclipseguy.com "Get out there."

explorer_2

the_explorer

fred_shoots

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All pictures from WebPages David Makepeace

SETalk

New plane for eclipse flights ?!

From: SchoppmeyerSenl200401kwsoft.de To: SOLARECLIPSESSenl200401AULA.COM Date: Wed, 17 Dec 2003 08:42:50

hi folks, yesterday I read an article about a new Boing 7E7, which will have a 70% bigger window than the planes have now.....

look at http://www.boeing.com/news/releases/2003/photorelease/q4/pr_031117g1.html Bye Joerg

From: Robert B Slobins

Weather permitting, would we not want to be in Mongolia for 2008 and Spitzbergen in 2015?

Maybe we all ought to get jobs as Boeing salesmen! cheers/rbs

From: Glenn Schneider

Hmmm... Boeing expects certification for flight operations in 2008. Maybe just in time for TSE2008? The altitude of the Sun would be just perfect for those windows just North of Greenland. -GS-

From: Jen Winter - ICSTARS Astronomy

Or 2015 at the North Pole!!! ;-) jen

From: Crocker, Tony (FSA)

Yes to land for 2008. Weather odds for 2015 must be as least as poor as the May 2003 annular, which were 30% at best if I recall Fred & Jay's analysis. My vote for 2015 is definitely air.

The Sun and Stradivarius

From: John M. McMahon To: HASTRO-LSenl200401LISTSERV.WVU.EDU Date: Wed, 17 Dec 2003 12:31:46

Here's an interesting piece from the BBC of 12/17/03: "Stradivarius' sound 'due to Sun'"

"Reduced solar activity in the 17th Century may be the reason for the perfect sound of Stradivarius violins. Scientists from Columbia and Tennessee universities in the US say the Sun's declining output at that time resulted in colder winters and cooler summers. This produced slower tree growth which in turn led to denser wood with superior acoustical properties - circumstances not repeated since."

Full text: http://news.bbc.co.uk/2/hi/science/nature/3323259.stm

And it being the appropriate date ... Io Saturnalia! John McMahon Classics Le Moyne College

Life on other worlds and eclipses

From: Bob Morris To: SE from LRM <solareclipsesSenl200401Aula.com> Date: Wed, 17 Dec 2003 15:08:45

A couple of years ago there was an article published that suggested that in other solar systems, only planets which had solar eclipses like earth (with a moon only slightly larger than the sun in apparent size) could support life.

I don't remember how they justified this claim.

Does any one recall this or have a reference? Thanks Bob Morris

SETalk

From: Govert Schilling

Bob -- I don't have a detailed reference, but I seem to remember how the argument went:

* An Earth-like planet orbiting a sun-like star has to be at more or less 1 AU from its star to support life.

* Life on Earth has benefited from the existence of a relatively large moon, since the gravitational effects of a large moon do stabilize the rotational axis, preventing dramatic changes in axial tilt and corresponding climate catastrophes. (Mars, without a large moon, exhibits much larger changes in axial tilt than the Earth.) Moreover, a large moon raises tides in the planetary core, which leads to a molten core and a magnetic field. This is important to keep lethal cosmic rays out of the biosphere.

* Consequently, a life-bearing exo -Earth would probably have a large moon in a not-too-wide orbit. This moon would produce total solar eclipses. --Govert

From: Glenn Schneider

I'm afraid I don't. But... If they dont have solar eclipses like on Earth, I wouldn't want to live there. -GS-

From: Govert Schilling

Mark:
> And since the Earth-Moon system is somewhat of a chance occurance (it exists thanks to a fortuitous catastrophic impact on the early Earth) this theory suggests that such life bearing planets will be a relatively rare occurance in the Galaxy?

Yes, that would be the conclusion. See the highly readable book 'Rare Earth' by Peter Ward and Donald Brownlee, in which these issues are also discussed. --Govert

From: eclipseclatSenl200401comcast.net

Gotta catch another plane...but real quick, the Moon stabilizes Earth's spin inclination, only plus or minus a few degrees. Mars for example, varies from four to thirty. Makes super cold winters and hot summers. tough for life if even closer to the Sun like Earth. Some real good articles in S&T and Astronomy on the subject. Ray Brooks

From: Thomas Goodey

A copy of my effort at posting is below between the asterisks:

I think the argument quoted by Govert Schilling is a bit post-hoc....

> I seem to remember how the argument went: * An Earth-like planet orbiting a sun-like star has to be at more or less 1 AU from its star to support life.

This may be granted for the sake of the discussion.

> * Life on Earth has benefited from the existence of a relatively large moon, since the gravitational effects of a large moon do stabilize the rotational axis, preventing dramatic changes in axial tilt and corresponding climate catastrophes. (Mars, without a large moon, exhibits much larger changes in axial tilt than the Earth.)

This remark about Mars is a widely-accepted theory nowadays, although I do not think that it can be said to be fully established yet.

> Moreover, a large moon raises tides in the planetary core, which leads to a molten core

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SETalk

But this is quite off the wall, I suppose. Nobody thinks nowadays that tidal friction is what keeps the core of the Earth molten. Maybe near Jupiter, but not here! The heat supply for the Earth's core is generally thought to be due to radioactive decay of unstable isotopes.

So the link in the chain of inferences is broken.

> and a magnetic field.This is important to keep lethal cosmic rays out of the biosphere.

One may grant that perhaps the existence of the Van Allen belts, which are maintained due to the Earth's magnetic field, is important for life.

> * Consequently, a life-bearing exo-Earth would probably have a large moon in a not-too-wide orbit. This moon would produce total solar eclipses.

Again this is a non-sequitur. The moon might not be big enough to produce TOTAL eclipses. For example, our moon is actually of quite low density. If it contained more iron, it could be much smaller, and still produce the same tidal effects.

I would rather use the strange fact that the Moon has roughly the same angular diameter as the Sun, as an example of the "reverse anthropic principle" which I have conceived - but that is another story.... Thomas Goodey

Is the Muslim crescent symbol inspired by an annular eclipse?

From: JpdowningSenl200401aol.com To: SOLARECLIPSESSenl200401aula.com Date: Mon, 15 Dec 2003 15:29:09

Hi All, Does anyone know the origin (if such a thing can be known) of the Muslim crescent symbol, as seen on the flags of Turkey and Pakistan? The symbol looks like either a low magnitude annular eclipse with Venus nearby or a predawn crescent moon in conjunction with Venus. The annular eclipse, being rare, would be noteworthy and puzzling, but the early morning crescent might be a sign to start a journey. Can anyone illuminate me on this? James Downing jpdowningSenl200401aol.com

From: Mike Simmons

There may not be one origin and the exact origin is uncertain but there is no indication an annual eclipse was involved.

See http://cyberistan.org/islamic/crescent1.htm for a brief article.Mike Simmons

From: AlcovedbaseSenl200401aol.com

The crescent symbol was known to be used in historical flags of Turkish tribes and states way before Turks converted to Islam in the 9th century CE. Several decades ago, I remember reading an article by a prominent Turkish astronomer. He had a theory about legends of astronomical origins commonly found in Turkish mythology. The North magnetic pole was known to be somewhere in Siberia a couple of thousands years ago. The original homeland of Turks was then in Central Asia, which is current day Mongolia. Auroras of that time are believed to be the origins of legends and symbols related to celestial events, including the crescent and stars. Unfortunately, I could not locate any articles on-line so far. If I come across anything I will forward it to the list. Haldun I. Menali Boston, MA http://members.aol.com/astroalcove/index.html

From: Jean-Paul GODARD

For me, it"s look like the exit of an occultation of Venus by a crescent of moon! Using some program, you can search if such occurence was close to an important historical event for Muslims JPG

From: JPvdGiessen

For several explanations see:

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http://flagspot.net/flags/islam.html

http://members.tripod.com/worldupdates/newupdates10/id49.htm

http://eetd.lbl.gov/Controls/publications/moon.pdf

http://www.geocities.com/Pentagon/Bunker/6066/ayyildiz.html Jan Pieter van de Giessen

From: Jay.M.PasachoffSenl200401williams.edu

I looked at the four URL's sent by Jan Pieter but they all seem to be general about the crescent, usually associating it with the moon. The query is really "are there any references anywhere on the Web or elsewhere to the idea that it isn't a lunar crescent after all, but that it is actually an annular eclipse." I had that idea myself while watching last spring's annular eclipse in Iceland. I'm glad James Downing asked. It sure looks like an annular eclipse to me rather than a crescent moon shape. Jay Pasachoff

From: darren.osborne

>From the book The Moon: a biography by David Whitehouse, it refers to the first visible crescent Moon as the start of the month in the Muslim calendar. Clerics (or religious people, at local mosques look out for it (at least 15 hours old). Therefore, I would conclude that the crecent on the flags has only to do with the Moon, not a partial eclipse of the Sun. Darren

From: turkeySenl200401qatar.net.qa

I would to tend to agree with Darren, since the Muslim has two major events in the year which are celebrating the holy month of Ramadan that start and end with new moon and the second is the Haj (pilgrimage) that also start after certain days of another new moon. Khalid

From: John McElroy

In connection with the Muslim cresent I notice no one takes into account the artistry and stylisation in the Muslim culture. When you look at their buildings and decoration the styles of which have persisted for a long time you see their use of wonderful flowing curves etc. I don't think that the cresent is other than a stylised one and not an actual accurate depiction of some event which could only be an annular eclipse as this shape is, as you realise, not possible for a cresent moon. And the Moon gets my vote. John McElroy

From: Michael Gill

I would certainly agree that given the importance of the sighting of the lunar crescent in the evening sky to Islam, it is the Moon that is being rendered on the flags of Islamic countries.

However, the original questioner perhaps wondered if an annular eclipse had influenced flag designers?

I think it is a valid question because of the differing appearance of crescent moons on the flags of various nations.

For me, the Turkish and the Algerian flags have crescents that are not consistent with the appearance of the Moon in the evening sky, between New Moon and First Quarter, viewed from a northern hemisphere country.

This is in contrast with Turkmenistan where the crescent is similar to a crescent moon in the western sky after sunset as seen from northern latitudes.

Mauritania, nestled in the tropics, has a flag with a crescent that surely depicts the appearance of the crescent moon from a tropical site.

(Continued on page 34)

SETalk

Now, when I looked at the following web site...

http://www.marmaris.org/Information/Turkish_Turkey_Flag.aspx

...It states that the Turkish flag "came into being during the Turkish-Greek war of 1920-22."

(Disclaimer: Since I have zero-knowledge on the subject of national flag origins, I give no assurance of the authority or accuracy of the contents of the pages referred to here. Note that it also states on that page "the North Star shone brightly next to the moon" which cannot be literally true.)

I note that there was an annular eclipse on March 28th 1922. From Anatolia (slightly north of the path of annularity) the solar crescent would have resembled the crescent depicted on the Turkish flag.

Is this coincidental? Or did the designer(s) of the Turkish flag witness this early evening eclipse?

>From the following URL: http://www.geocities.com/SoHo/Studios/9594/bayrak.htm

...I read that "The fundamentals of the Turkish Flag were laid down by Turkish Flag Law No. 2994 of May 29, 1936." This date is in close temporal proximity to the TSE of 1936 that also crossed Turkey. Depending on your location in Turkey, you could have seen a crescent that resembled that depicted in the Turkish flag.

Is this also coincidental?

Perhaps Turkish list members can answer this? Cheers, Michael Gill

From: Peter Tiedt

There was a fair bit of discussion in this group about two years back concerning the Holy month of Ramadaan and solar eclipses. Ramadaan and solar eclipses are currently "in tune" with one another. The question was raised aas to whether the sighting of the moon during a solar eclipse (because it is the moon that is being observed, and not the sun (during totality)) could herald the start of the Muslim new month. The answer was an emphatic NO! - that it had to be the sighting of the first crescent moon, some >10 <24 hours after the eclipse to herald the new month (and any fasting that went with it).

At that time there was also discussion on the earliest sighting of the crescent moon, and there were a bunch of fellows in Iran who managed to sight the crescent moon at some incredibly early age. This seems to reinforce the theory that the Muslim crescent is exactly that - a crescent moon. AAMOI, the Muslim equivalent of the Red Cross is known as the Red Crescent, perhaps a further reinforcement. Look at the ambulances etc in you latest Iraqi television footage. my 2c worth P

From: Brian Garrett

Khalid Shaukat's Moonsighting site (www.moonsighting.com) has a wealth of information on the importance of the crescent moon, as well as the role of solar eclipses, in Islam. The site's primary purpose is to provide information on visibility of the _hilal_ (newly visible crescent) for religious purposes, but there is also information on eclipses and their role int he religion as well. (Did you know that Muslims are expected to recite special prayers of praise to God on the occasion of an eclipse?)

As for the eclipse-vs.-crescent moon controversy, it seems to me that Occam's Razor applies here. Given the importance of the _hilal_, it seems to me that a new moon is what is being represented, not an eclipse (annular or otherwise). Brian

From: Mike Simmons

I observed the 1999 total solar eclipse from a hilltop communications facility above the town of Nahavand, Iran. As the eclipse progressed I noticed the familiar sound of prayer rising from the town below. But I noticed that it was not the usual time of day for

(Continued on page 35)

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prayer so I asked a friend about it. He said that there are special prayers given as thanks for any wonderful natural phenomenon, including eclipses and that they would pray from the beginning of the eclipse to the end. When I expressed my concern that they would then miss totality he said, "Oh, no, they'll stop to watch the total eclipse!" There's no sense giving thanks for something you're not going to take advantage of. The prayer provided an unexpected sort of beauty to the experience among the crowds of excited eclipse watchers. But then there has been something unexpected at every eclipse I've been to so now I expect the unexpected -- it's part of the anticipation of the event, i.e., "What will happen this time?".

More on our visit to Iran for that eclipse observation is available at http://www.mssimmons.com/ms/Iran/Eclipse99/Report.html. Mike Simmons

From: AlcovedbaseSenl200401aol.com

Hi again, I have been a little busy lately, so I could not read my messages until now. It's amazing to see how inquisitive you all are, especially after reading those emails about seeing the thin lunar crescent and Turkish flag law!

To tell the truth, as a Turkish-American and being born and lived in Turkey for more than three decades, and being an amateur astronomer for as far back as I remember, I had never heard of any relationship between TSE's and the Turkish flag. Almost all of the Turkish states in history had depicted some sort of crescent moon on their flags after they converted to Islam. I had mentioned on my previous message that most of these states had used similar icons (crescent or stars) in pre-Islamic periods as well. So, some Turkish astronomers believe that these might have been originated by the auroral displays in the distant past.

As for the Turkish Republic's independence war (1920-1922), we have a folk story stating that the victorious troops saw a crescent moon reflected in the waters of a river covered with blood of the fallen ones. Hence the crescent and the red color of the Turkish flag. The star has the historical roots mentioned before and also represents the new state as a rising, young and promising country.

Having said that, I will definitely check with my professional counterparts in Turkey, to see whether they have any information in regards to the eclipses in 1922 and 1936 and instating the current Turkish flag.

So, please stay tuned. We might end up digging some historical records pretty soon! Clear skies to all, Haldun I. Menali Boston, MA http://members.aol.com/astroalcove/index.html

JPL Image - Capturing the Motion of an Eclipse Shadow

From: Peter Tiedt To: Solar Eclipse Mailing List <SOLARECLIPSESSenl200401AULA.COM> Date: Wed, 17 Dec 2003 19:58:57

JPL has an image available for download describes as such ...

Capturing the Motion of an Eclipse Shadow Full Resolution TIFF: http://photojournal.jpl.nasa.gov/tiff/PIA04347.tif

No comments as I am still downloading (26.5 MB) - others with cable may still see it before I do ;-) P

From: Mike Simmons

A 400KB jpg (same resolution) is also available at http://photojournal.jpl.nasa.gov/jpeg/PIA04347.jpg. A "modest" size jpg of it (549 x 607 pixels; 31 KB) can be found at http://photojournal.jpl.nasa.gov/jpegMod/PIA04347_modest.jpg. The original caption released with the photo (and links to all images and other information) can be found at http://photojournal.jpl.nasa.gov/catalog/PIA04347. Here is the caption without the embedded links found on the web page:

Within that narrow window during a solar eclipse where an observer on Earth can watch the Moon's shadow obscure more than 90% the Sun's disk, the Multiangle Imaging SpectroRadiometer (MISR) captured these views of the Antarctic surface during the total solar eclipse of November 23, 2003. The path of the Moon's umbral shadow began in the Indian Ocean in the far Southern Hemisphere, and passed over parts of the Queen Maud and Wilkes Lands in Eastern Antarctica.

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In this set of images, the darkness of the shadow is clearly increasing over the 7 minutes that it takes for all of MISR's nine cameras to view a scene. These nine images progress from the most forward-pointing camera (far left) through to the most backward-pointing camera (far right), cover the same geographic area, and have been processed identically. The area covered by the nine MISR swaths begins at the Antarctic coastline (about 66° S, 140° E) near the French station, Dumont d'Urville, and ends at about 77° S, 32° E in Queen Maud Land. The increasing darkness in the center part of the images relates to the approach to the time of maximum eclipse. This detailed map indicates the position and time of maximum eclipse, when the Sun's disk was completely blocked. The first MISR camera observed the area of the 23:00 UTC box at 22:57, and sunset occurred before MISR viewed the coast at Maitri station. The blue arrow on this context map indicates the position and direction of the MISR coverage in relation to the Terra MODIS view of the eclipse.

The Multiangle Imaging SpectroRadiometer observes the daylit Earth continuously and every 9 days views the entire globe between 82° north and 82° south latitude. These data products were generated from a portion of the imagery acquired during Terra orbit 20920. The panels cover an area of about 380 kilometers x 2909 kilometers, and utilize data from blocks 146 to 170 within World Reference System-2 path76.

MISR was built and is managed by NASA's Jet Propulsion Laboratory, Pasadena, CA, for NASA's Office of Earth Science, Washington, DC. The Terra satellite is managed by NASA's Goddard Space Flight Center, Greenbelt, MD. JPL is a division of the California Institute of Technology.

Image Credit: NASA/GSFC/LaRC/JPL, MISR Team. Mike Simmons

Antarctica Travelogue

From: Jen Winter - ICSTARS Astronomy To: SOLARECLIPSESSenl200401aula.com Date: Thu, 18 Dec 2003 20:51:51

Our local paper asked me to write an article about our Antarctic voyage.

Bear in mind that it was written for the general public and for that reason, I skipped a great deal of our story as it pertained to planning and technical details. jen

The Secret Society of Antarctic Total Solar Eclipse Chasers

“Why don’t we go to the Moon for New Year’s and watch the ball drop at Times Square with a telescope ?”

This was about the scale of what was being proposed, but we had to get it done. We would need to organize an expedition to take passengers to a barren and remote section of Antarctica and time it in such a way to watch an event that would last 1 minute and 20 seconds, so close to the horizon that a snowdrift could block the view. It was land of the Midnight eclipse. A total solar eclipse happens about once every 18 months at some spot on the globe. Our company takes people to see them. This time, the path of totality was a cruel reminder that man does not occupy all of earth’s square footage. The event was so unusual that there had never before been a human who had ever seen a total solar eclipse in Antarctica. So we began what seemed like an impossible dream and set-out to make it happen.

Our most daunting obstacle was the fact that Antarctica has a huge amount of nothingness where there are no inhabitants or visitors. We aren’t talking about “no McDonalds”. In this neighborhood, hundreds of thousands of square miles have never experienced a human footprint. In the winter (our summer) the Sun never rises. In the summer (our winter) the Sun never sets. It just goes around in a wobbly circle. This surreal fact would mean that our eclipse would occur at about midnight. We were also lucky because the eclipse would happen in the late spring, when temperatures should have been about freezing. A friend in Cape Town found a Russian company who recently began flying cargo aircraft to a new ice runway in the eclipse path. We could fly there in just 6 hours. All we had to do was fly to South Africa to catch the flight and have perfect weather in which to fly and see clear sky.

Their point on the map appeared to be in the path, but the sun was so low in the nighttime sky, that we could miss it entirely with

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an unfortunate position of a small hill. I spent weeks worth of long nights fretting and worrying, calculating with special software, maps and simulations. We have a lot of friends who know how to calculate a lot of astronomical details, but nobody on earth has ever needed to calculate this before. The overall good news was that with a perfectly flat horizon, the distance the sun should be up from the earth was about the width of an outstretched thumb… turned sideways. We acquired a spot on a plateau with a good clear view in just the right spot.

Once we felt secure that the expedition was possible, and the eclipse visible… we proceeded with our plans. This would mean that some 9 months ahead, to pay-out our life savings to fill a very big gas tank. In Antarctica, one doesn't pull your car to a filling station. The fuel must be sent ahead by icebreaker the year before. We needed to send the fuel for our airplane's gas tank. Now we were in business. We had a flight to the ice, a view of the show and now gas to come home.

Fast-forward through the months of agony in negotiations, strained communications with Governing agencies, Scientists, Russians, Indians, Japanese, Swiss, Spaniards, Canadians some English and one very colorful Kansan lady who moved to Botswana. At some point, I forgot to remember that jumping a cargo plane to the Antarctic circle was strange. When we learned that the 30-foot thick ice heaved, dumping ¾ of the science station's fuel (including ours) into the ocean where it sank, I wasn't even terrified anymore. I knew we would muddle-through somehow. There was something I had learned from the Russians in my time in their care. While they work very differently than most Americans, if it is at-all possible, then no matter how difficult, they will get the job done.

Come November, Vic and I packed our bags with a strange sense of calm. At this point, the rest of the journey was no longer in our hands. In the wee hours of Monday morning, we quietly donned the travel clothes laid out days before. In the Atlanta airport, our group began to gather. We saw friends we hadn't in years, noses all pressed against the glass, looking for our flight to Neverland. Something about this expedition felt more sobering than any of those before. We arrived in Cape Town, soon completely assembled as of dozens of enthusiasts from around the world serious and brave (or stupid) enough to risk our necks for 80 seconds of heaven on earth.

Forced to hover in a holding pattern in Cape Town for days in advance of Antarctic take-off, we made our way as-if we were all ignoring the obvious. I called it the elephant in the living room. We kept busy at local sightseeing attractions and chatted over wine as-if in a week-long party, all the while completely pre-occupied by the fear that the dream wouldn't be real in the end. Antarctica. If I say it enough times, does it become normal? It couldn't be both ways. The operations chief twice delayed our departure due to horrific storms that leveled our tents and blew-away equipment. We were a group of only 70 people who could ever hope in our lifetimes be able to say that on vacation, we would travel to 70 degrees south, stand on the ice in the path of humble enlightenment and see this miraculous event. "Remember," I said at dinner, to one of the eclipse virgins, "Saint Benedict saw a total eclipse once. That moment is now painted on fresco's all over Europe as his moment of enlightenment…. and what kind of impact did St. Benedict have after that?" One day brought me to stand at the very tip of Cape Point on the Southern end of South Africa. I stood at the end of this outstretched peninsula and looked hard at the ocean to the South. "That's the end of the world." I thought as I squinted my eyes to imagine how many thousands of miles more that flight would take me. "I'm going there." I felt a little taller that day.

So then the call came. "Be ready in 45 minutes!" Sober reality was over. Giddiness set-in and every article we had packed and set-out was now scattered and missing. I felt like an expectant father taking his wife to the hospital. Clients were scattered like children, all hunting for one last item. The displaced Kansan from Botswana wanted to go in a dress with sandals. One gal came staggering to the bus with shoes untied and coat over her shoulder vowing never to drink again. With a lump in my throat, the bus pulled away from the Hotel. We were going. It would happen. Through the airport, stamping passports and screening bags, the excitement didn't let up. We could hear the future coming like a parade around the corner.

Here, we were introduced to our airplane; a motley loaded cargo craft with a roll-up ladder. It could have been a hot-air balloon for all we cared; it was our ride. Feet tapped in anticipation through the obligatory safety talk. For pity's sake, we all knew how to buckle a seat-belt. Granted, the emergency oxygen procedure would have stumped the most seasoned traveler. The non-conventional crew had rigged a videocamera from a cockpit window to the cabin where they projected the image directly on a view-screen for us. After earplugs and last minute crew scrambling to tie-down a few items, the craft rumbled and shook and heaved us into the air with the drama due our journey. I looked at Vic, squeezed his hand and smiled.

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Six hours went by at amazing speed. Before I knew it, the crew had uncorked the champagne to celebrate crossing the Antarctic Circle. "How far before we can't turn back?" asked our friend David Levy. Vic winked and said quietly, "We're beyond it." He returned a quiet "Oh". During our flight, visitors were permitted into the navigation pit where we could look out the huge expanse of glass-windows below. It was an Ilyushin-76 and had a glass-bottomed nose. Once again at landing, the viewscreen was turned on to show us our landing. Like a countdown for lift-off, I remember seeing the airstrip markers click by. Eventually, our plane groaned to a stop and we all looked around at each other like children who fell asleep in the car. "We're in the path!" I shouted. All we had to do was get out of the airplane and we would be within the path of darkness. We would ultimately be a bit greedy, however, and want a better vantage point to look the eclipse directly in the eye.

Someone should make a comedy sketch about what we all look like getting off this plane onto a skating-rink of ice. Vic stopped a few feet off the ladder, bent down and kissed the ice. Most of the rest were happy to just hug each other. Cameras clicked every few feet. One gentleman opened his hometown newspaper to have his picture taken reading the local sports section. We scattered like waddling penguins in little baby steps. A good hour passed before anyone was terribly concerned about our lost tents. Three had blown-down and couldn't be repaired. We could stay in the underground storage hangar. It couldn't blow down.

What you can't prepare for is Antarctica's miles and miles of nothingness. As far as the eye can see, there is crisp, white oblivion on all sides. In a few minutes, the dreamy confusion changed to a staggering frustration. Everyone wore the same color yellow and red parkas. With hoods and snow-goggles on, it became impossible to tell one puffy clone from another. Communication was impossible, as distances between landmarks spanned farther than the brain could associate. After the giddiness of landing wore-off, a second level of frustration set-in. Parkas and gloves, and sunglasses and snow boots all served to make movement more clumsy. Vic's glasses kept fogging over. I kept stubbing the ends of my boots on the ice and getting my hair caught in the velcro on my hood. Our friend Bob described the feeling as: "Ok, I'm alive and I can see." Snowmobiles and bodies came and went swishing by in a flurry of activity and anticipation. Our Russian hosts soon started flagging people to come for scenic flights in the little twin propeller planes. Bulldozers moved luggage with pull-behind sleds. All the bags looked alike too. We only had a few hours before the eclipse would begin, so we struggled to find our equipment and belongings in the blur of strangeness and activity. We unpacked and re-packed tripods from sleeping bags as red and blue airplanes now buzzed over the camp's tents at unerringly low altitude. Everyone was now on their own, making their preparations alone. Like frantic ants, we scurried to be ready for our ride to the viewing location.

We were scheduled to begin moving the group at 8pm. With a bit of confusion over how we would move 75 people overland with bulldozers and a couple of 10-passenger airplanes, the trek began. The Indian science team had a bulldozer with a passenger cab, and no blade; a passenger bulldozer, I guess. They hooked it up to a small square building and began to drag it on sleds. 10 of us climbed 7 feet up into the dozer cab while another 20 boarded the box on skis. It grumbled forward without complaint over the uneven bumps of drifted snowpack. Our passenger bulldozer was well-equipped with windows and carpeting. It had heat too, but we didn't need it bundled up and packed-in like eager, puffy bumble-bees. We sighed a relief to know that another step in the plan was soon to be completed. We were running out of problems to prevent our solar eclipse bliss.

The detail which nobody had yet appreciated was the sky. Without perfectly clear skies to the horizon, the entire expedition would be a sad disappointment. This sky was a once-a-year clear day. Vivid blue overhead faded like a mirage into soft shades of noth-ingness at the horizon. When we exited our cozy bulldozer, we noticed the sight to the north included a view for hundreds of miles of clean, clear nothingness. They say that on a clear day, you can see forever. We could pretty-much see forever from this spot.

There was only one small problem. That wasn't the direction we needed to look. In the other direction were small hills and a snowbank just to the left of the setting sun. Perhaps setting sun isn't the right term, as it was more like a rolling sun. A small bump on a hill we hadn't expected could ruin everything! Now, as a group 10 of us worried, and paced and calculated. We had dueling GPS's and compared compass readings for a few minutes before we realized that the sun would be mostly visible, but a tiny part still below the horizon. Remember, we had already left the known world and had long since landed on a foreign planet. Watching the sun move from right to left, dip below the horizon and pop back up wasn't so crazy anymore. With the disk at it's lowest, we scrambled to walk away from the hills. Somebody claimed that if you want to make an object appear smaller, move away from it. "Prove it!" I said, knowing we only had 45 minutes until the main event. He pointed to the North, where our long shadows were stretched a half-mile. "Look! The Sun hits the ground up there, but it doesn't here." This was convincing enough, so our parade began. We were running out of time, running out of sun, and it felt like we weren't moving anywhere with landmarks that would-n't change.

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Someone dropped his bags and said, "Here's good enough!" and nobody argued with him. The moon had begun moving partly in front of the Sun and temperatures had begun to drop. Setting up, our tripod legs were so cold, they burned my exposed fingers when I tightened them. Vic and I had 4 cameras we hoped to use. Lens caps fell away as more pesky bi-planes buzzed us, landing to deliver more people to the site. The cries piped-out from everyone around, "My camcorder is dead!" "My camera won't turn on!" The cold was now quite bitter and playing havoc on equipment. Vic was now on auto-pilot as his news photographer instincts kicked-in. He stomped around a little like a robot in big snow boots plugging things in and setting things up. "We did it!" cried David Levy. He was to my immediate left and came running to hug me. I put film in one camera to find its winder had fallen off. Moving to my second camera, the film back popped open in my hand, exposing film. Hopefully nobody's videotape will reveal the colorful words I uttered about then. We had brought some hand tools to fix equipment problems and I started to rifle through the bag to find them. "How long 'till totality?" I asked someone. My watch was too cold to read the LED display. "Seven minutes!" shouted Vic. I dropped the tools and hollered the all-American battle-cry "Duct-tape!" We strapped it up and clicked a few frames through. My second camera now wouldn't do anything. It wouldn't fire. It wouldn't advance. It was gone.

"Look!" shouted David, pointing to the ground in front of us. "Shadow Bands!" for those who have never seen them, shadow bands are an effect of sunlight when it is reduced so much that it is affected by the atmosphere like light on the bottom of a swimming pool. Many people think shadow bands are just a hoax like green flash. Most eclipse chasers have "sort-of" seen shadow bands a little bit. That was the extent of my experience thus far. "Look at the white" David said, pointing to the bumpy parts of the snow catching the Sun. I hopelessly glanced at them not expecting to see anything. All I could see was what looked like smoke or snow washing over in a wave. Then it occurred to me that it moved with too regular of a pattern to be smoke. "Wow!" Now that I knew what I was looking at, I could see them everywhere. The sky was glimmering with the effect and the sun itself was flickering like looking into a movie projector in a theater.

"Here comes the shadow!" said Vic, pointing to the eastern sky. It was swooping down like a huge bird overhead. Dark and monstrous, it curved it's wing down over the sun, touching it just as the moon finished moving over the disk. "Diamond Ring!", we all shouted as the last shard of light pierced through the valleys on the moon. On came sudden darkness as the image erupted into burning flames of orange, red and green around the Sun. It's corona, which can only be seen during a total eclipse, shone like golden wings of an angel out in all directions. Shooting up from the edge in 1:00 position, was the spire of a green streamer, lofting solar energy off into space. I clicked a camera, but had no idea what buttons I was pushing, much less which knobs were being turned. Everyone was incoherently scrambling and crying and shouting all at the same time. "It's green!" "Look at all that color!" "It's beautiful!" "My camera won't work!" I don't know why, when we are all standing there after traveling such an amazing journey to see the eclipse, we are compelled to suggest a notion we figure didn't dawn on anyone else, saying "Look at that." but we are. The horizon under the left of the shadow was emerald green. The horizon everywhere else was cotton-candy blues and pinks.

The eclipsed sun sat perfectly there, on the end of the earth to where we had traveled ourselves to see it. It boiled in sunset golden yellow, orange and red like molten lava. Two spots of ruby-red prominences lumped out from behind the moon, revealing the sun's chromosphere in live and unaffected color. I scanned around and spotted the white dot of the planet Venus in the dark sky. Then, as the moon rolled just a tiny bit more, a glimmer of light came creeping from its edge. Pinched between the moon an earth, it came first as a hint of red, then exploded into rainbow colors back to white. My heart was pounding with the thrill of a lifetime. "Wahoo!" I was now sobbing with happiness, crying and screaming in joy. Shouts and cheers from a crowd which I hadn't noticed before erupted, accompanied by fireworks. After only 80 seconds of heaven, it was over. The shadow bands returned, but we didn't care. We all ran around and hugged everything and everyone in sight.

My brain kept reeling, "We pulled it off!" in disbelief. All that planning, all that effort, and the huge gamble that everything would work out did. Slowly, we began to look around at the wreckage. Dead cameras and broken photo dreams littered the landscape. With chemical toe-warmers in our gloves, we shivered our equipment back into our bags. We carefully returned every trace of our presence back into our bags for our return. "Negative 22 degrees Celsius." announced Bob. The wind was howling and the cold had become fierce. Suddenly, my parka was ringing. I had completely forgotten the satellite phone in my pocket. David Levy needed to give a telephone interview to Discovery Channel Canada. I answered it and handed it over to David. The next few minutes blurred in chattered teeth and a cold trudge back to our bulldozer. With a murmur of exiting moviegoers, our team piled back into our cozy people mover for our ride home. "We did it. We did it. We did it." was all we could think about in numb s ock. "… and it was beautiful!" About then Fred chimed-in, "Hey! There's a person in my eclipse picture." He passed his digital camera around for everyone to see his coveted prize. Between our group and the eclipse was a line of more people. One of these people

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landed smack-dab on the horizon between Fred and the eclipse.

“Cool!” said Bob. “You can say that again.” said Vic.

We didn’t spend much more time in Antarctica. One guest played the violin and another guy taught people to fence in the world’s first fencing championship held in Antarctica. We also never did completely warm back up after the chill of the night before. We all took scenic flights and saw unbelievable sights of marvelous amazement we could never hope to describe in words. Too soon, however, our base commander came to us to say we would need to leave early. A new storm was coming which could trap us there for days. After hearing the harrowing stories from the blizzard the week before, we were mostly eager to go.

Now the elephant occupying our living room was the fact that it was over, and we would have to leave all of our good friends to go home. Their friendship warmed the experience much more than the Antarctic chill could ever undo. Before we left, we formed our own little society of very special humans. The first people to witness a total solar eclipse from Antarctica; The Secret Society of Antarctic Total Solar Eclipse Chasers. - Jen Winter

From: Jay.M.PasachoffSenl200401williams.edu

Hi, Jen. Would you mind sending a copy that uses straight quotes and straight apostrophes? The symbols come in strangely and it makes it hard to read. Thanks. Jay

Antarctic Souvenirs

From: Jen Winter - ICSTARS Astronomy To: SOLARECLIPSESSenl200401aula.com Date: Fri, 12 Dec 2003 07:18:43

Hey... I almost forgot. I had some commemorative lapel pins made up for our 2 groups of Antarctic Eclipse Chasers at Novo and on the Kaptain Khlebnikov.

We also shared them as special thanks to all of our hosts and suppliers in Antarctica at Novo and Maitri stations.

We had 250 gold cloisonne pins made and now have about 30 left that aren't spoken-for. We are interested in making them available to other Antarctic Eclipse chasers even if they were not our guests. There aren't very many left and we would sure prefer to see that they get into the hands of the chasers who sold their souls for umbral access, but had limited access to souvenirs in Antarctica.

We are asking a small price for them to help recoup costs, so if anybody is interested in some of the remaining pins, please let me know off-group.

It's the white, blue and gold Antarctica Eclipse logo seen all over our picture pages at: www.icstars.com

I'll try to get a digital picture of the pin itself up on the site tomorrow. Clear Skies, Jen

From: Chris Malicki

Thanks to the generosity of David Foot, I now have a new eclipse stamp cover in my collection. You can see it on bottom of my page at http://members.rogers.com/kmalicki/covers_2001-to-2003.html The cover and inserts inside the cover witnessed totality from the air over Antarctica. Please note also that I have changed my web address to http://members.rogers.com/kmalicki/ If you have links to my site, please change to the new address. Chris Malicki

Wishes

From: Jan Sládeèek To: "'SOLARECLIPSESSenl200401AULA.COM'" <SOLARECLIPSESSenl200401AULA.COM> Date: Fri, 19 Dec 2003
Dear All, Today is my final day in the institute in the year 2003. I wish to you merry Christmas and happy New Year and much successes in the year 2004. Clear sky! 8 June mainly! Best regards, Jan Sladecek CR, Prague

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The first observer of Martian solar eclipses?

From: Fraser Farrell To: eclipses <SOLARECLIPSESSenl200401AULA.COM> Date: Sat, 20 Dec 2003 05:13:39

To all, Noticed this prediction on the Beagle 2 website (www.beagle2.com) :

- - - -

"Around February 2004, a month or so after Beagle 2 reaches the surface of Mars after a 6 month journey aboard the ESA Mars Express, the shadow of Phobos will pass repeatedly over the landing site in the Isidis Basin. The reduction in light as Beagle 2 is shadowed will be recorded by onboard detectors which form part of the environmental sensors package of the scientific payload. The plan was put forward by Dr A. Christou from the Surrey Space Centre who said 'that the timing of the events when the lander is in the shadow will allow computation of the position of Beagle with an accuracy of at least 10 and possibly 100 times greater than the current uncertainty'. "

- - - -

I'm wondering if this will be the first time that a solar eclipse will be observed _from_the_surface_ of Mars? Or has this already been achieved by one of the earlier landers? I note that some of the lunar landers of the 1960s-1970s did observe the Earth eclipsing the sun. I guess these count as the first observed extraterrestrial solar eclipses?

I also note the other historic "first" achieved yesterday by Mars Express + Beagle 2. The first image of a spacecraft in interplanetary space that actually shows any detail... cheers, Fraser Farrell

Star of Bethlehem and possibly eclipse seen

From: KCStarguySenl200401aol.com To: SOLARECLIPSESSenl200401aula.com Date: Fri, 26 Dec 2003 04:37:36

Hello all When I considered eclipses as one of my 10 myths of eclipses presentation/research, eclipse (lunar or solar) were discounted. There was no lunar eclipse at that time. It would be interesting to see if someone would look up the eclipse and see if it did touch into Jerusalem. However most likely such an even would have been noticed so it must have been at the most, very unspiring.

The conjunctions were possibly a better possibility. I researched a host of conjunctions, pairing and what was also called "massings (more then one planet/ object."

Molnar's dates etc were also off and a very close conjunction of two or more planets (not a comet, miracle etc etc) was the probability. My research found a prime candidate as June 17 2 B.C- a spectacular occulation of Jupiter and Venus in the constellation Leo which may have have started the Magi on their way west.

I took Starry Night Pro and went back in time. Lo and behold, over Jerusalem was a close pairing of Jupiter and Venus, in case so close to be almost inseparatable. (I will try to post on one of my websites).

My conclusions mirrored a person named Mosley. Also David Levy in his information, I believe last year, also said that he thought that this conjunction was possibly the same event that pointed to the Star of Bethlehem. Happy holidays!!!!

From: Marc Weihrauch

Hello, discussing the "Star of Bethlehem" and the visitors from the East we should first take a look at the gospel according to Matthew, the only passaage mentioning the Star. It does not say that there were kings visiting, it only speaks of "wise men" - probably educated priests. It does not say there were three of them, we can only guess so by the three kinds of presents they brought. It does not even say that these things happened in December, by the way!

To find out more we will have to ask a theologian. In our planetarium there was a lecture together with a theologian some time ago, and he told us that it is no use to search for a historical "Star of Bethlehem"! He called the Bible passage in question a "haggada", which is a form a religious text that does not even attempt to be a historical report. Therefore we have to consider the star a metaphor. By mentioning (or better adding) it the author refers to a passage of the Old Testament and underlines his belief that Jesus is Christ, the messiah or anointed one the Jews have been waiting for. In short: The search for a historical Star of Bethlehem is nothing but a winter sport for star gazers :) Peaceful and merry Christmas to all of you! Marc

From: Jean Meeus

Each year around Christmas there they are again, ad nauseam, those speculations about the so-called Star of the Magi.

< Lo and behold, over Jerusalem was a close pairing of Jupiter and Venus,

What does this mean? Planetary conjunctions do not occur "over" a given place!

I doubt that 2000 years ago eclipses could be predicted with a good accuracy. I am not a historian of astronomy, but what accuracy was

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achieved in the prediction of eclipses at the time of Kepler, or of Copernic, or of Ptolemy? And surely a very small partial eclipse, when the Moon is almost grazing the Sun's limb, would not have been very impressive!

Here are three points of the southern limit of the region of *partial* eclipse of April 18 of the year -5 (historians' 6 BC). The longitudes and latitudes are given in degrees and decimals.

East North
longitude latitude

34.0000 31.6945
35.0000 31.6396
36.0000 31.5752

For the calculation, the value Delta T = 166 minutes = 9960 seconds has been used. However, this value is not known accurately. Jean Meeus

Spencer Howson ABC Brisbane QF 2901 Eclipse Report

From: Glenn Schneider To: SOLARECLIPSES-Senl200401AULA.COM Date: Sat, 27 Dec 2003 06:36:06

Though some here may already know, or have come across, Spencer Howson's report on the 23 Nov 2003 eclipse from QF 2901, I just learned of it myself this evening:

http://www.abc.net.au/brisbane/stories/s996269.htm

In addition to the on-line text and video links, be sure to play the audio segment: "Spencer's Ten Minute Eclipse Report" which is very well put together. Cheers, Glenn Schneider

From: Klipsi

Glenn, have you heard , or anyone else, if QF64 saw the eclipse ? Klipsi

Big earthquake in Iran

From: KCStarguySenl200401aol.com To: SOLARECLIPSESSenl200401aula.com Date: Fri, 26 Dec 2003 19:52:19

To those who went to the eclipse In Iran. A big earthquake hit Iran a short time ago with I think 5000 casualties. It was near Bam (spelling?). Dr. Eric Flescher (kcstarguySenl200401aol.com),

From: Mike Simmons

Bam was in the path of totality in 1999 but despite being a major tourist destination for many years I don't think there were many eclipse chasers there. Its isolated location in the desert and its proximity to Pakistan have made it an important hub for illegal drug trafficking so it has been mostly avoided by visitors recently. The 2000-year old citadel there is the largest mud-brick structure in the world and has been designated as a World Heritage site. Early reports are that the citadel has been largely or completely destroyed. More importantly, however, is the fact that the same method of construction is widely used in the region, which explains the great destruction and loss of life. Estimates are that the deaths could top 10,000. Mike Simmons

Our Eclipse from the Quantas Flight

From: FerrerlsSenl200401aol.com To: solareclipses-Senl200401aula.com Date: Wed, 17 Dec 2003 01:32:27

Just sharing... here's our photos of the Antarctica Eclipse from the Quantas Flight.

http://www.ferrercom.com/2003/AntarcticaEclipseDay.htm Enjoy, Leticia Ferrer

From: Evan Zucker

I've never seen a photo of huge shadow banks on the top of clouds before. How unique! Some of your photos (and of other eclipse chasers) of the broken ice in Antarctica reminded me of Europa.

On an unrelated note, thanks to the many people who sent their good wishes after the firestorm in San Diego last October. I still have nearly 300 SEML messages to read -- I decided to give up on the older ones and try to stay current. My family is currently living in a rental apartment about 5 miles from where our house was, and we just bought a temporary house two miles from our destroyed house to live in while our house is being rebuilt, which is expected to take another 12-15 months.

Evan Zucker San Diego, California

From: KCStarguySenl200401aol.com

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Letica Nice shots of the eclipse, diamond ring and more. I am curious when that picture of the shadow bands were taken near to totality or when before or after on your plane in Antarctica. Can you describe what it looked like ? I am curious also when others have seen Shadow bands and what they thought they looked like. The other pics of your slide show on the web are nice too. SBs were all around in 1999 but I could not see the damn things. In 2001, I shouted for everyone to look after the 2001 eclipse, and there they were like slithering- snakes going on for over 4 mintues. I caught them faintly on my videos which was amazing.

Eclipse sighting

From: KCStarguySenl200401aol.com To: SOLARECLIPSESSenl200401aula.com Date: Sun, 28 Dec 2003 14:14:02

eclipse sighting

There is a new "eclipse cigarette" on the market (I don't smoke , just saw the ad could not help but notice). The only thing cute about it is there is a small partially eclipsed sun (50%) with the eclipsed sun coming in from the right at a little angle) above the "i" (instead of the dot) eclipse ad letters. I also thing interested is the disclaimer near the prominent pack of cigarettes (the word eclipse with the eclipse sun are on a greenish oval on the pack." It says "Eclipse is not perfect.....As everyone knows, all cigarettes present some health rish, including Eclipse. (or should it say Eclipses?). Dr. Er ic Flescher (kcstarguySenl200401aol.com),

From: Evan Zucker

I've always been interested in products and web sites that have an eclipse "angle" because my company is called Totality Software, Inc. and uses a TSE at second or third contact as its corporate logo. http://www.TotalitySoftware.com

I recently came across a new company name, Eclipsit Corporation. I think it's a new name for an older company because I had previously purchased their Microangelo icon editing software and don't remember seeing that name. The web site at http://www.eclipsit.com has a nice TSE picture, and they have a clever corporate logo in the upper left-hand corner, although I think the logo is depicting an annular or partial eclipse rather than a TSE. Evan Zucker San Diego, California

SENL to come (January 2004)

From: Friedhelm Dorst To: Patrick Poitevin <solareclipsewebpagesSenl200401btopenworld.com> Date: Sun, 28 Dec 2003 00:32:39

Hi, some remarks on the discussion between Joel and Daniel about the seat allocation trouble, the malfunction of one of my two camcorders and some new insights into the past concerning this all : In my memory Croydon had promised that two seats should remain empty for giving space for instruments and luggage during the time it would not be needed and I thought that these seats were quite adjacent to the window seats which makes sense because of comfort reasons. Joel was right that this was only the case for people who had purchased this seat B, which I did not. Nevertheless I wondered why the first person, a young lady, was complimented away from seat B by Phil Asker (resulting in my relief: justice finally defeats impudence) but shortly after replacing her by Terry (I forgot his surname) . Instead of remaining anxious about the menace of new trouble I preferred to make an agreement with Terry: One window for each of us, but as the owner of the much more expensive seat I should be allowed to choose my window with preference of the better quality. Moreover I advised that we both should resist to desires of any passengers to press their noses against the windows thus leaving detoriated optical quality. To my relief I could wipe out those patches with tissues completely within say 10 seconds. Terry only became nervous and angry when I could not decide between the two windows (which both were of superb quality) as late as 10 minutes before totality. I then chose the floor window which was the only of both that could allow the use of a tripod, be it in normal configuration (standing on the floor) or hanging below my handheld camcorder for stabilizing reasons in case of strong vibrations. To my surprise it turned out, that the flight could be such smooth that even in telefocus mode only very slow and subtle changes of the alignment did occur hoping for the same during totality. This option gave the unforseen opportunity to use a handheld second camcorder originally planned for alternating use rather than simultaneously. In order to avoid excitement-induced mistakes I had planned to activate the record mode of both at least 5 minutes before second contact regardless where their lenses were actually aiming.Different from my and Daniel's knowledge about the reason of the missing

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totality on the handheld cam- corder (we did not yet play the last partial phases) I later learned that I announced stopping the record mode of which (and so I did). The only explanation can be the impetus of conserving energy which seems to have overrun my "security-waste" of energy in this special case. When once more switching on the camcorder alignment and zooming procedures and, of course, the tantalizing view must have sufficed to stop the next step of pressing the record-standby-button once more. What did I see with this cam- corder ?: The chromosphere at second contact, then when opening the diaphragm and zooming out, very long streamers, a bright lunar disk (perhaps, but not sure, with subtle earthshine mottling), delta and perhaps also beta scorpii, Antares (also with naked eye) and further zooming out: Antares, Mercury Venus and the Corona within the frame. This all remained unrecorded - what an accom- plishment - when considering the seat price and >12 years of videotaping experience ! Not the camcorder completely malfunc- tioned, it was me , not Croydon Travel nor Terry whom both it would be so easy to make responsible for this flop.

What should be the summary of my personal impression ? First of all thanks to Glenn and Croydon Travel whose preparations were crucial for the realization of this unforgettable endeavour ! I cannot complain about our window quality which seems to have been more superb than for a few people elsewhere in the plane regardless of the booking class. I had not to endure any working restrictions when using only one of two excellent windows and Terry and me had reason for mutual congratulations. Only later, when back from Australia, my friend Markus Kraffczyk mentioned trouble with seat neighbours and that Croydon sold eclipse seat tickets to some (so far only) Antarctic viewers on that flight ! Apart from this very odd kind of business by Croydon Travel: It may have resulted in new eclipse enthusiasts and lastly (or preferently ?) should be greeted. What about my brick stone portrayed by Lynn Palmer on Paul Maley's website ? It was attached with 4 strong rubber ribbons below my unsuccessful camcorder for substantial pointing stabilization when taping free-handed. This can be recommended for dampening much of the vibrations becoming so obvious when using telefocus mode. This would also have worked at my seat window very effectively ! Friedhelm (Freddy) Dorst e-mail: sietisSenl200401gmx.de

From: Joel Moskowitz

I also had an episode with the record button during an eclipse. In 1992, we chartered a flight out of Rio on VASP airlines (DC10), also navigated by Glenn. I remember in the late partials, I had started recording. Just before CII, I forgot that I was already recording and pressed the button, putting the recorder in standby. At CIII, I pressed it again, to stop it, but again, actually started it. So I had everything BUT totality. You would think that I would have noticed the big red REC notice change to the green STBY, but of course theeclipse excitement got to me.

Number of total eclipses

From: Friedhelm Dorst To: Patrick Poitevin <solareclipsewebpagesSenl200401btopenworld.com> Date: Sun, 28 Dec 2003 00:53:14

Hi Daniel mentioned that I have travelled to more total eclipses than any other eclipse chaser. Glenn is right: this cannot be true ! My totality account has achieved No. 22 with the recent Antarctic eclipse, Glenn has now 24 (?) and the same or more should have collected John Beattie, once more with us on board this memorable flight ! Professor Charles Smiley had 22 when in Winnipeg in 1979, but he passed away a few years later, perhaps unsurpassed so far. My return flight back from Canada to Germany on March 1 was remarkable even more than this eclipse flight of 2003 in respect to flight smoothness: when over the Atlantic Ocean I viewed polar light curtains sometimes changing pattern within one second, some times remaining "frozen" I attempted to press my Zenza Bronica 2 1/4 " x 2 1/4 " camera with f/2.8 lens and 64 ASA film against the window for 2 minutes showing Capella, Menkalinam and a few more stars only slightly fuzzy when considering the gently floating vantage point. Also the polar lights came out astonishingly sharp. Freddy

From: Daniel Fischer

Just for the record, I think (and thought I said) that Freddy Dorst is among those in history with the most eclipses of all types, including annular ones. Also his record of 22 totals in just over three decades is impressive. As is, I may add, his ratio of totality time vs. travel time: It is already a common expression among (some) German amateur astronomers that one is 'dorsting', i.e. racing to some remote place in the world for an astronomical event and immediately coming back home. Such as in: "Ah, I don't want to skip work so long for this eclipse in Tahiti, I think, I'll just dorst for it ..." Daniel

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From: Joel Moskowitz

I think Craig Small is 23 totals. AND he has never been clouded out. He's also done annulars and partia ls, but I don't have a count on them.

From: KCStarguySenl200401aol.com

Hello Do you have your account of the eclipse on a website? Let me know as I would like to see it. Possibly others can post their accounts as well. Glenn's is nice. I am glad you had a great time all. I wish I was there. Wow 23. I hope the rest of the SEML are only counting Totals. Meanwhile, does a total count if you see at least 1 secound or totality? Just wondering how people count them according to specification with clouds and being clouded out or not. The only problem I had was 1991 when I only saw a few seconds (I forgot how many) of totality (arggggg) instead of the whole enchilada (I was across from Baja in Mazatlan - what a mistake should have traveled elsewhere). Isn't there a listing of someplace about the times people have been in totality? I thought someone put one together a few years ago. Dr. Eric Flescher (kcstarguySenl200401aol.com), Olathe, KS. USA 7 total solar eclipses and counting:

From: Sheridan Williams

Umbraphile's name		S	V	Dur	Score	2003	2002	2001	1999	1998	1997	1995	1994	1992	1991	1990	1988	1986	1984	1983	1981	1980	1979	1977	1976	1974	1973	1972	1970	1966	1965	1963	1962	1961	1959	1954
	Max possible	31		104.6		151	124	296	143	249	170	130	263	321	413	153	226	0	120	311	123	248	169	157	287	308	423	156	208	117	315	100	248	165	182	155
Tom	Alderweireldt	3	3	12.7	100%				134	215					410														60							
Judy	Anderson	5	5	14.7	100%				18	220			178		403																					
Pierre	Arpin	7	11	26.8	64%			217	0	180			186		410					310		151	154	0				0				0				
Dave	Balch	7	9	20.1	78%		0	200	143	144	0	40	193		247							240														
Derryl	Barr	8	9	22.7	89%	151	27	212	126	226	0	51	181		386																					
Ascension	Belda	2	2	4.3	100%				70				185																							
Chris	Bennett	10	11	35.0	91%			200	0	206		47	206		385							246	170				365	131	145							
Dolors	Bernia	2	2	5.6	100%			212	124																											
Marc	Bernstein	4	4	14.8	100%				133	186					400								169													
Rik	Blondeel	3	3	12.1	100%				130	210					388																					
Alfonso	Borgonoz	2	3	5.2	67%				124	0			185																							
Carlos	Borgonoz	3	3	10.8	100%				70				185		395																					
Sergio	Borgonoz	4	5	15.3	80%			212	124	0			185		395																					
Barrett	Brick	11	13	35.6	85%		21	200	134	216	0	50	187		387								165			232	373	0	168						
Eric	Brown	5	6	16.3	83%				130	0		100	175		403														170							
Fred	Bruenjes	3	3	5.3	100%	78	28	214																												
Ellen	Bruijns	4	6	14.7	67%			151	131	210	0				390	0																				
Robert	Byrne	2	4	6.7	50%				0	220			180		0																					
Ann	Callow	2	3	5.0	67%			143	0	155																										
Paul	Carter	6	9	17.8	67%	72	25	193	0	218	0		175		385	0																				
Wil	Carton	6	7	19.0	86%				124	212					394	0						220										68		121		
Juan Carlos	Casado	8	8	24.8	100%	140	3	213	141	223			184		397		186																			
Robert	Chalmers	3	3	10.6	100%				10	218					410																					
Tony	Crocker	2	2	3.7	100%		79		142																											
Arne	Danielsen	2	3	2.8	67%		26		142							0																				
Colin	Davies	6	8	19.3	75%				144	216	0	119	176		380	0	124																			
Kris	Delcourte	8	8	30.2	100%		81	210	136	223					405		205			308		243													
Frances	Donovan	5	7	17.1	71%			143	0	155			177		403	0	150																			
Eclipsomaniacs	Eclipsomaniacs	3	3	4.9	100%		15	137	142																											
Joanne	Edmonds	4	4	9.3	100%		74	210	107	166																										
Dietrich	Ehmann	4	4	8.4	100%			142	130	177		55																								
Fred	Espenak	13	17	42.2	76%		0	210	125	190	0	41	187		377	70			95	293		238	169	0			361	0	173							
Don	Estes	3	3	12.1	100%				135						410														180							
Brian	Felles	10	12	31.9	83%		26	193	127	218	0	47	178		410	0				309		245	159												
Jean	Felles	8	10	25.1	80%		26	193	127	218	0	47	178		410	0				309																
David	Fielding	2	3	3.5	67%		32	180	0																											
Eric	Flescher	7	7	26.8	100%			180	166	210					360								180				330	180								
Gerard	Foley	7	9	15.3	78%		0		123	195																	328	0	173			100			82	1
William	Forrest	3	5	8.0	60%				0	155			177			0	150																			
Mike	Foulkes	8	8	23.2	100%		25	143	142	155		40	175		403					310																
Jose	Gandia	3	6	11.6	50%				116	0			185	0	395	0																				
Isabel	Garriga	2	2	7.3	100%			213		223																										
Mike	Gill	10	12	31.4	83%	151	27	210	140	217	0	43	182	375	414	0	127																			
Juan	Gomez	4	5	12.8	80%		3	213	142						412	0																				
Jacques	Gratin	11	14	26.8	79%				125	230		43	178		0	0	150		54	309	100	200	150					0				70				

Full Screen
Close Full Screen

(Continued on page 46)