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SOLAR ECLIPSE NEWSLETTER

June 2003

SOLAR ECLIPSE NEWSLETTER

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The Solar Eclipse Mailing List (SEML) is an electronic newsgroup dedicated to Solar Eclipses. Published by eclipse chaser Patrick Poitevin.

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It is a forum for discussing anything and everything about eclipses.

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

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

The sole Newsletter dedicated to Solar Eclipses

Dear SENL Reader,

Wow, what a live. It has been very busy lately. By finishing this SENL and writing this intro, it is nearly end of July. Sorry for the delay. We will do better in the future. We had the transit of Mercury, the annular solar eclipse, Jo's 40th birthday and last but not least, we moved houses. And not mentioning some illnesses in the family and all the busy schedules at both our work.

Nevertheless, this is the June issue of the Solar Eclipse Newsletter. Mainly concentrated on the Transit of Mercury and the Total Lunar Eclipse. Many of us observed both successfully. Though, we observed the transit from Gibraltar through clouds paths and the lunar eclipse was completely cloudy. As well as the annular eclipse in Scotland. But you will read more in the next issue of the Newsletter.

As you will notice in this issue, many observers captured the transit successful. Some of us even had a double transit. Meaning a plane or a bird of the sun as well. Some pictures have been published in this newsletter, but we could not use them all.

Just a taste of Gibraltar below. Joanne and Laura on a terrace in the sun. No need to say we had a lovely trip.

Keep those solar eclipse related messages coming ...

Joanne and Patrick

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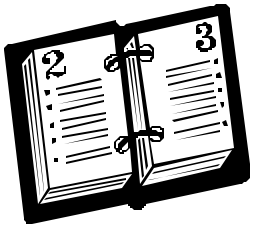

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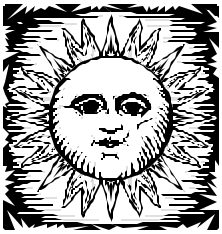

Dear All,

Please find herewith the solar eclipse calendar (SECalendar) for June. 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

June 03, 1239 "The sun was obscured on Friday at the 6 th hour of the day, and it lasted for a while between the 6 th and 9 th hours and it lost all its strength and there was as though night. There appeared many stars, and then the Sun grew bright again of its own accord, but for a long time it did not regain the strength that it usually has." Ref. Anales Toledanos Segundos, FRS 97.

June 03, 1239 "while I was in the city of Arezzo, where I was born, and in which I am writing this book, in our monastery, a building which is situated towards the end of the fifth latitude zone, whose latitude from the equator is 42 and a quarter degrees, and whose westerly longitude is 32 and a third, one Friday, at the 6 th hour of the day, when the Sun was 20 deg in Gemini and the weather was calm and clear, the sky began to turn yellow and I saw the whole body of the Sun covered step by step and it became night. I saw Mercury close to the Sun, and all the animals and birds were terrified; and the wild beasts could easily by caught. There were some people who caught birds and animals, because they were bewildered. I saw the Sun entirely covered for the space of time in which a man could walk fully 250 paces. The air and the ground began to become cold; and it (the Sun) began to be covered and uncovered from the west." Ref. Ristoro d'Arezzo, Della composizione del mondo, FRS 97. Many other cronics could be find in Italy (Anales Caesenates and Storie Fiorentina, IV and Archivo de Duomo di Sienna), Portugal (Chronicon Conimbricense, III).

June 03, 1239 From Montpellier, France; Zurita, Anales de la Corona de Aragon: "The King (James the Conqueror) entered the city of Montpellier on Thursday the 2 nd of June of the year 1239; and on the next day, Friday, between midday and the ninth hour, the King writes that the Sun was eclipsed in a way people did not remember ever having seen before, because it was entirely covered by the Moon and the day grew so dark that one could see stars in the sky." Ref FRS 97 page 400.

June 03, 1239 From Split, Croatia: (Thomae Historia Pontificum Salonitanorum et Spalatinorum): "At the same time, AD 1239 on the third day from the beginning of the month of June, a wonderful and terrible eclipse of the Sun occurred, for the entire Sun was obscured, and the whole of the clear sky was in darkness. Also stars appeared in the sky as if during the night, and a certain greater star shone beside the Sun on the western side. And such great fear overtook everyone, that just like madmen they ran about to and from shrieking, thinking that the end of the world had come. However, it was a Friday, the 30th day of the (lunar) month. And although the same defection of the Sun appeared throughout the whole of Europe, it was not however spoken of in Asia and Africa." Ref. FRS 97, pages 401.

June 03, 1925 Death Camille Nicolas Flammarion in Juvsy sur Orge. He was born on February 26, 1842 in Montigny le Roi in Hauter Marne. Ref. The Bibliographical Dictionary of Scientists, edited by David Abbott, 1994.

June 04, 1769 Six hours after the transit of Venus there was a total solar eclipse. This solar eclipse was total in Scandinavia. Venus should have been projected in the corona of the sun. The planet was about one solar diameter from the edge of the sun. The next corona transit of Venus will be June 6, 2263. This is just a corona transit and not a transit of the planet over the solar disc. Venus is about one solar radii from the eclipsed suns disc. For a Mercury corona transit you have to wait till 3269 and 3853. (ref. ENB 09/98)

June 07, 1434 In the Java Sea, near longitude 115 degrees 45 arcminutes East, latitude 5 degrees 15 arc minutes South, four total solar eclipses were visible in a time span of 13.7 years: on 7 June 1434, 30 September 1437, 23 January 1441 and 5 March 1448. Ref. JM 9/99.

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June 07, 1826 Joseph von Fraunhofer died in Munich. Born in Straubing, Bavaria on March 06, 1787. The 11th and youngest child of a poor glazier. He contracted tuberculosis in 1825 and died in Munich on 7 June of the following year. Ref. The Bibliographical Dictionary of Scientists, edited by David Abbott, 1994.

June 08, 1937 At the total solar eclipse of 8 June 1937, Charles H. Smiley, Brown university, procured small-scale photographs, with a 4 inch f/1 Schmidt camera at an altitude of 14.000 feet, that showed a double wedge of light extending along the ecliptic from the sun. The almost vertical band of light may be identified with the zodiacal light. (ref. SaT 1/2-1938, SaT 3/1954)

June 10, 2002 The path of the 10 June 2002 annular eclipse crosses its successive Saros eclipse of 21 June 2020 one Saros later. Ref. FE Canon.

June 10, 2932 Jupiter will be occulted by eclipsed Moon on 10th of June, 2932 (!!!) Mars - almost 500 years earlier: on 26th of April, 2488 and Saturn - "only" in 3.5 centuries, on 26th of July, 2344! Thus, although it will finally happen, no one presently living on Earth will be able to see it with his/her own eyes. Even more, no occultations of Regulus by the eclipsed Moon is expected before 22nd of February, 2445! Ref. "Mathematical Astronomy Morsels" (Willmann-Bell, ed., 1997), by Jean Meeus.

June 11, 1983 Total Solar Eclipse in Indonesia. The Islamic month Ramadan started the same day of the eclipse. Mathematically the Ramadan should start the day after. The Islamic month is after each 12 lunations. Exact date for June 11 1983 is 29 Cha'ban (month 8) 1403 which is just before Ramadan. The last eclipse which was during the month Ramadan was the partial solar eclipse of July 20, 1982 (28 Ramadan (month 9) 1402). The last total solar eclipse was July 31, 1981 (29 Ramadan (month 9) 1401) while the last annular eclipse on August 10, 1980 (28 Ramadan (month 9) 1400). The next solar eclipse in the month Ramadan will be the partial solar eclipse of December 25, 2000 (28 Ramadan (month 9) 1421), which was the last Christmas Eclipse. The next annular eclipse will be on December 14, 2001 (28 Ramadan (month 9) 1422) and the next total solar eclipse on December 4, 2002 (29 Ramadan (month 9) 1423). Of course, the total solar eclipse of November 23, 2003 on the Antarctic, and also in the month Ramadan, will not reflect live of the Penguins... (ref. ENB 6+7/98)

June 12, 1843 Birth of David Gill in Aberdeen, Scottish astronomer whose precision and patience using old instruments brought him renown before he achieved even greater fame for his poincer work in the use of photography to cataloque start. In 1872 Gill went on a 6 year expedition to Mauritius, with Lord Lindsay and others, in order to measure the distance of the Sun and other related constants particulary during the 1874 transit of Venus. He measured solar parallax by considering the near approach of Mars on a privat expedition, sponsored by the Royal Astronomical Society, on Assension Island in 1877. He retired in 1906, for health reasons, and lived in London until he died of pneumonia on 24 January 1914. Ref. The Bibliographical Dictionary of Scientists, edited by David Abbott, 1994.

June 13, 1760 Last Total Solar Eclipse on a Friday 13 th. Last solar eclipse was a partial in 1974. The next solar eclipse on a Friday 13 th is in July 2018, also a partial solar eclipse. There are 24 solar eclipses on a Friday the 13 th between 0 and 3000. Of which 13 partial, 9 annular and 2 total solar eclipses. The most odd is the one of 13.03.313, which was an annular eclipse. June 13, 2132 is the next Total Solar Eclipse on a Friday 13 th.

June 14, 1938 Death of William Wallace Campbell (1862-1938), American astronomer. Had many eclipse expeditions. The Royal Society also mentions 14 or 15 June 1938. (ref. DD 6/98, Rc 1999)

June 14, 2151 Next total solar eclipse with possibility of seeing Aurora Borealis. Up to now no aurora has been seen during a total solar eclipse. There have been attempts before during solar eclipses of 29 June 1927, 30 June 1954, 20 July 1963, 10 July 1972 and , 22 July 1990. The solar eclipses need to be close near the aurora zone, the sun altitude must be favorable, solar activity preferred near maximum and the angle of the eclipse track to the zone not too large. Between 1950 and 2000, there are 9 eclipses of which 4 favorites (see above). The recent eclipse of 9 March 1997 was not that favorable. The next after this of 2151 will be June 4 2160. (ref. SaT 3/1954 and 12/1953)

June 15, -0762 (763 BC) "On that day, says the Lord God, I will make the sun go down at noon and darken the earth in broad daylight." Ref. Amos, Chapter 8, verse 9 (Old Testament)

June 15, -0762 (763 BC) Assyria: "Insurrection in the City of Ashur. In the month of 'Sivan', the Sun was eclipsed..." Ref. The Assyrian Chronicles, FRS 97.

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June 16, 0364 Four minutes of totality for those in the north of Scotland. This ranked as the 11th longest British total eclipse in the period 1 - 3000AD, and had a high altitude of 53°. The eclipse track traveled across Norway, Sweden, Latvia, Lithuania and Russia. (ref. SW- UK Eclipses)

June 16, 0885 The Chronicon Scotorum states "An eclipse of the Sun; and stars were seen in the heavens." is the 3rd longest British total eclipse in the period 1 - 3000AD at nearly 5 minutes. It had a 300-km wide track, which meant that virtually all of Scotland would have seen this eclipse. The eclipse track traveled across Norway, Sweden, Finland and northern Russia. (ref. SW- UK eclipses)

June 16, 0885 The maximum theoretical length for a British total eclipse is 5.5 minutes. The eclipse of June 16, 885 lasted for almost 5 minutes and the same will be true for the Scottish total eclipse of 22 July 2381

June 16, 1406 The last total solar eclipse in Belgium before 1999 (and current country boarders) was June 17, 1433. The total solar eclipse of June 16, 1406 was the one before in Belgium.

June 16, 1806 José Joaquin de Ferrer (Spain), observing at Kinderhook, New York, gives the name corona to the glow of the faint outer atmosphere of the Sun seen during a total eclipse; he proposes that the corona must belong to the Sun, not the Moon, because of its great size. Ferrer also states, that during the total eclipse of 1806, the irregulations of the moon's surface were plainly discernible. (ref. History of Physical Astronomy)

June 16, 1806 Tecumseh's Eclipse. The Shawnee chief Tecumseh realized that the only hope for the various tribes in east and central North America was to join together. He was ass by his brother-Tenskwatawa -a "prophet" who called for a rejection of the "white ways" and a return to traditional values. Tenskwatawa was ready for Tecumseh had learned from explorers that a total Solar Eclipse was to occur. Tecumseh ordered the Great Spirit to release the sun. Ref.: "An Account of 1806, June 16 eclipse from a sorrow in our heart: A life of Tecumseh" by Allan W. Eckert.
16 June, 1825 Last calendar year where there were two Annular-Total Solar Eclipses. There was an annular-total solar eclipse on 16 June and one on 9 December 1825. The next occurance we have as such is in 3051, 3 February and 30 July.

June 17, 1433 From Al-'Asqalani, Inba'al-Ghumr bi 'Bna al-'Umr: "On the 28 th of (the month of) Shawwal, the Sun was eclipsed after the 'Asr (afternoon) Prayer and continued until the time of sunset. It cleared up after the conclusion of the eclipse prayer, which I led in the Great Mosque. Then the sun set and we prayed the Maghrib (sunset0 Prayer in the mosque. When the eclipse prayer was concluded, I sent a witness to ascend the minaret of the mosque to see if the Sun had cleared. He returned, saying that it had cleared completely." Ref. FRS 97, pages 446.

June 17, 1433 From al-Maqrizi, Islamic: "On Wednesday the 28 th of Shawwal, the Sun was eclipsed by about two thirds in the sign of Cancer more than one hour after the afternoon prayer. The eclipse cleared at sunset. During the eclipse there was darkness and some stars appeared … On Friday night the 14 th of Dhu I-Qu'da, most of the Moon was eclipsed. It rose eclipsed from the eastern horizon. The eclipse cleared in the time of the nightfall prayer. This is rarity - the occurrence of a lunar eclipse 15 days after a solar eclipse." The solar eclipse was on 17Jjune 1433, while the lunar eclipse on 3 July 1433. Ref. Encyclopedia Britannica.

June 17, 1433 In Scotland known as the "Black Hour". Although covering all of Scotland, this eclipse went well into northeast England down to north Yorkshire. Even though the eclipse was nearly four and a half minutes on the center line (the 6th longest British total eclipse in the period 1 - 3000AD), it must have still been over three minutes in Yorkshire. (ref. SW-UK Eclipse's). The reference about the Black Hour account was in The Story of Eclipses by George F. Chambers, 1899, which refers to the Phil. Trans, vol. xl p. 194 of 1737. But following book mentioned the eclipse in Scotland as "Black Friday": Total Eclipses of the Sun by Mabel Loomis Todd, 1894 which refers to History of Physical Astronomy, London, 1852, p. 365. In Celle, near Hanover in Germany a cronic says: On the 17 th June of the year 1433 there have been a terrible solar eclipse on the 5th degree of Cancer. The sun passed 4 or 5 degrees of the solstice point. The total sun was eclipsed, covered by the Moon, in the tail of Draco. This eclipse was also the Total Solar Eclipse in Belgium before 1999.

June 17, 1906 Thomas George Cowling birth. Is a British applied mathematician and physicist who has contributed significantly to modern research into stellar energy with special reference to the sun. Ref. The Bibliographical Dictionary of Scien-

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tists, edited by David Abbott, 1994.

June 18, 0931 The area that was to become Disney World in Orlando, Florida experienced almost 3 minutes of totality just before noon. The moon's shadow also passed over that same area in 1050, 1259, 1325, 1600, 1625 and 1918 although none of those events were on June 18. Disney World's next eclipse will be August 12, 2045 with over 6 minutes of totality. "You did not have anything for June 18", David Balch 5/01

June 19, -0548 (549 BC) "Duke Hsiang, 24 year, 7 th month, day chia-tzu, the first day of the Moon. The Sun was eclipsed and it was total." Ref. Ch'un-ch'iu, book IX (Chinese), FRS 97.

June 20, 0540 "the sun darkened on June 20 th, and the stars showed fully nearly half an hour past nine in the morning." Ref. The Anglo-Saxon Chronicles and collated by Anne savage, CLB Publishing Ltd.

June 20, 0540 Totality at following 8000 meters summits: K2 (Chogori), Nanga Parbat, Gasherbrum I (Hidden Peak K5), Broad Peak (K3) and Gasherbrum II (K4). The total solar eclipse of 20 June 1582 is only total at K2. The next totality at K2 is on 8 March 2733. Ref PA 6/00.

June 20, 1061 "On Wednesday, when two nights remained to the completion of the month Jumada, two hours after daybreak, the sun was eclipsed totally. There was darkness and the birds fell whilst flying. The astrologers claimed that one-sixth of the Sun should have remained (uneclipsed) but nothing of it did so. The Sun reappeared after four hours and a fraction. The eclipse was not in the whole of the Sun in places other than Baghdad and its provinces. Ref. Ibn al-Jawzi, Islamic, encyclopedia Britannica.

June 20, 1955 In a used bookfair Eli Maor found a slim book entitled, "Has the Earth a Ring Around It?" The author, one Frank G. Back, was a friend of Einstein and once raised with him the question, why does the moon look so dark during a TSE - or conversely, why does the background sky look so bright? Einstein encouraged him to do some spectroscopic measurements at a future eclipse, which the author did at the June 20, 1955 eclipse over the Philippines, the longest in many years. He did his experiments from within the canopy of a T-33 training jet that chased the Moon's shadow at 600 mph, thus prolonging the duration from 7 min. 8.6 sec. to 12 min. 15 sec. As far as I know, this - and not the famous Concord flight of 1973 - must have been the first successful attempt to chase the Moon's shadow from an airplane with the expressed purpose of prolonging the eclipse. The author did confirm that the background sky is much brighter than it "should" be theoretically, and he tried to explain this by hypothesizing that a ring of diffuse particles is orbiting the Earth beyond the Moon's orbit! Evan Zucker (6/01 SEML) remarks that the T-33 maximum speed is from 525 to 543 mph.

June 20, 1955 Longest total solar eclipse is lasting 7m 31s but has never been observed. But the total solar eclipse of 20 June 1955 lasted 7m 8s in the Philippines.

June 21, 0019 The millennium opened with a superb mid-morning eclipse of over 4 minutes duration. It ranks 8th longest British total eclipse in the period 1-3000AD, and holds the record for the eclipse with highest altitude at 59° elevation. This eclipse is broadly similar in track and time of day to the forthcoming August 1999 European Eclipse passing through central Europe and across the northern Black Sea. (ref. SW-UK Solar Eclipses)

June 21, 0122 Joint 3rd shortest British Total Solar Eclipse in the period 1-3000AD, this 75 km wide eclipse occurred late on midsummer's day, and would have been nonetheless spectacular for 20 seconds for the inhabitants of the Faroe Islands. However it could have passed unnoticed by most of the UK, although as totality passed between the Shetland and Orkney Islands their inhabitants must have noticed a significant darkening. (ref. SW- UK Eclipses)

June 21, 0400 An eclipse of the Sun on 21 st June, recorded by Cicero. "On the nones of June the Sun was covered by the Moon and night." Ref. BAAJ 06/00, Encyclopedia Britannica. Gerry Foley remarks that Cicero's dates to be 106 - 65 BC (5/01 SEML)

June 21, 1629 The Chinese were able to predict eclipses, but not well. Imperial astronomers ,who had failed to anticipate an eclipse in 1610, predicted a Solar Eclipse for this date. Jesuit missionaries, however, insisted that the prediction was an

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hour early and that rather than lingering for 2 hours the eclipse would last only 2 minutes. The Jesuits were correct. As a result, the emperor ordered that the Chinese calendar be revised.

June 21, 1874 Death of Anders Jons Angstrom (1814-1874), astronomer and physicist of Sweden. Famous for spectroscopy and spectra analysis. He found a relation between the fraunhoferlines in the Solar spectra and the discontinue spectra of hot gasses. He detected several elements in the Sun's atmosphere. He published in 1868 the atlas of the solar spectra. (ref. DD 6/98, Rc 1999)

June 22, 1633 Galileo Galilee appears for the Inquisition because he defends the heliocentric world of Copernicus. (ref. DD 6/98)

June 23, 1191 "In the month of June, the Vigil of the Nativity of St John the Baptist (June 23), the 9 th day before the Kalends of July, on the 27 th day of the Moon, at the 9 th hour of the day, the Sun was eclipsed and it lasted for three hours; the Sun was so obscured that the darkness arose over the Earth and stars appeared in the sky. And when the eclipse withdrew, the Sun returned to its original beauty." This was an annular solar eclipse. Ref. Stubbs, Gesta Regis Henrici II et Ricardi (1867), FRS 97.

June 24, 1778 The first total solar eclipse recorded in the United States when the track passed from Lower California to New England. According to Thomas Jefferson, the eclipse was clouded out in Virginia. This is considered the first total solar eclipse in British Colonies and which lasted four minutes over the middle Atlantic and New England States. (ref. +ENB012)

June 24, 1940 Death of Alfred Fowler (1868-1940), British astronomer and physicist. Studied spectra of the Sun. (ref. DD 6/98, Rc 1999)

June 25, 1275 "Te-yu reign period, 1 st year, month VI, day keng-tzu, the first day of the month. The Sun was eclipsed; it was total. The sky and Earth were in darkness. People could not be distinguished within a foot. The chickens and ducks returned to roost. (It lasted) from the hour szu (9 - 11 h) to the hour wu (11 - 13 h); then it regained its brightness." And "The Sun was eclipsed; it was total. Stars were seen. The chickens and ducks all returned to roost. In the following year the Sung dynasty was extinguished." Ref. From Sung-shih, FRS 97, pages 257, 258.

June 25, 2150 Last total solar eclipse with a maximum duration of totality longer than 7 minutes between year 0 and 4000 was June 30, 1973. The eclipse was visible in Africa. The next total solar eclipse withn a duration of totality longer than 7 minutes will be on 25 June 2150 in the Pacific Ocean. Thereafter it will be 5 July 2168 in the Indian Ocean. Ref. More Mathematical Astronomical Morsels by Jean Meeus; Willmann-Bell, 2002.

June 26, 1424 Of the 20 total eclipses to visit the Orkneys and Shetland Islands in the period 1 - 3000AD it was the 13th longest in the whole of the UK at 3 minutes 56 seconds it was surpassed in Orkney by those of 364, 885, 1185, 1433, 2681. The eclipse track traveled across Denmark, Germany, Poland, Ukraine, Moldavia, and the Black Sea. (ref. SW-UK eclipses)

June 26, 1824 Birth of William Thompson (Kelvin), British physicist. Known for his absolute temperature scale. (ref. DD 6/98)

June 26, 1883 Death of Sir Edward Sabine (1788-1883). Mentioned a correlation between sunspots and magnetic disturb on earth. (Ref. Rc 1999).

June 28, 1451 Sort of the American version of the Medes and Lydians. The Seneca and Mohawk tribes were preparing for war when a total solar eclipse swept over both their camps late in the afternoon of this early summer day. Both immediately sued for peace. (ref. DB 6/97: "A star Called the Sun" by George Gamow).

June 28, 1489 Last total solar eclipse on Easter Island. The next one will occur on 11 July 2012 and thereafter on 25 February 2324. Ref. More Mathematical Astronomical Morsels by Jean Meeus; Willmann-Bell, 2002.

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June 29, 0512 Totality at following 8000 meters summits: K2 (Chogori), Gasherbrum I (Hidden Peak - K5), Broad Peak (Falchen Kangri - K3) and Gasherbrum II (K4). The same 8000 meter summits have totality on 11 August 1124 and 13 November 1331. Ref PA 6/00

June 29, 1818 Birth of Italian astronomer Angelo Secchi (1818-1878). Photographed eclipse of 18 July 1860, studied sun spots. (ref. DD 6/98, Rc 1999)

June 29, 1868 George Ellery Hale is born in Chicago. Principally he was an astrophysicist and he distinguished himself in the study of solar spectra and sunspots. He developed a number of important instruments for the study of solar and stellar spectra, including the spectroheliograph and the spectrahelioscope. He died in Pasadena on 21 February 1938, but 10 years later, his greatest dream, the 200 inch reflecting telescope on Mount Palomar was completed. Ref. The Bibliographical Dictionary of Scientists, edited by David Abbott, 1994.

June 29, 1927 From Dorothy Sabin near Clitheroe, England: "I was so enthralled with this celestial shadow tearing across the world that I almost forgot everything else. Hurriedly, I looked above my head. The sky was dark blue, flecked with mother of pearl clouds, wonderfully luminous. I turned east, and there in the sky, between patches of bright cloud was a black disc entirely surrounded by living flames. I did not notice Baily's Beads, neither did I see the corona. I had not eyes for anything save those leaping, glowing flames. It seemed hardly more then a second or two that they were visible, for the Moon slipped by, and a tiny slit of Sun appeared; instantly it was broad daylight once more. The eclipse was over. Down the hillside we scrambled, our thoughts and minds full of the great sight we had seen. It was not till we see the morning papers that we learned how disappointed thousands of people had been." Ref. Anow, vol. 2, nr 2.

June 29, 1927 Gellivara 1073: Minor planet discovered September 14, 1923 by Johann Palisa at Vienna. Named for the small town Gällivare in Swedish Lapland where in the year 1927 astronomers from several countries observed the Total Solar Eclipse of 1927 June 29. Named by the astronomer J. Rheden and endorsed by Anna Palisa. (ref. VK 6/97)

June 29, 1927 If you really speak about England, then the total solar eclipse of 29 June 1927 was the latest indeed. This short eclipse has not been observed by many people. Weather conditions where bad. The centerline was in the north of Wales, Preston and north England.

June 29, 1970 Contact lost with first German satellite Azur. Studied interaction between solarwind and earth's atmosphere. (ref. DD 6/98)

June 29, 1972 Launch of Russian satellite Prognoz 2. Studied sun and roentgen.

June 30, 1535 In "Name in the Window" Margaret Demorest proposes that Shakespeare's sonnets, nos 1-109, incorporate a calendar for the years 1501-1609, each sonnet corresponding to a year. Peter Nockolds has investigated the 3 appearances of the word Eclipse. "Clouds and eclipses staine both Moone and Stunne, And loathsome canker lives in sweetest bud." This Solar Eclipse was not visible from London. (ref. ENB012)

June 30, 1954 Felix Verbelen: "mijn" eerste, bewust waargenomen zonsverduistering deze was van 30 juni 1954. Het werd voor mij een onvergetelijke gebeurtenis. Ik was toen een schoolknaap van pas 9 jaar en alhoewel het een woensdag was werd er toen ook in de namiddag naar school gegaan...". First solar eclipse of Felix Verbelen. He was 9 years old and remembers the eclipse.

June 30, 1954 The last total solar eclipse in Britain was 30 June 1954. The about 3 minutes totality was visible in the Faroes and the southern line was crossing the northernmost Shetland. Many people in England do remember this eclipse and is mistaken as total for those, which saw a large partial eclipse. The eclipse track traveled across Norway, Sweden, Lithuania, Byelorussia, and Russia.

June 30, 1954 Total Solar Eclipse in Scandinavia. Jupiter was invisible and behind the solar disc and which is a very rare phenomenon. Sun, Moon, Earth and Jupiter were on one line. Occultation of Jupiter by the Sun during the complete

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time of the eclipse. Disappearance of Jupiter June 30, 1954 at 9h03m and reappearance on July 1, 1954 at 2h15m. First contact of the eclipse was at 10h09m and fourth contact at 15h03m. (ref. H&D 1953, JM)

June 30, 1954 Just before sunrise on June 30, astronomers at stations in Nebraska and Colorado attemped the first observation of zodiacal light made while the sun is in total eclipse below the horizon. The eerie phenomenon was that time belived to be reflected from ionic or fine dust particles, National Geographic Magazine June 1954 wrote page 869. Scientists sponsored by the National Geographic Society, and leaded by Dr. George Van Biesbroeck of the University of Chicago's Yerkes Observatory, would sweep the horizon with fast photoelectric scanners which they hoped they would catch the elusive zodical light during the eclipse darkened dawn.

June 30, 1973 During the eclipse in Kenya, an object has been photographed. It was detected with several cameras and on more photographs. Till now, the object has not been classified, and it has been called the Dossin-Heck. During the same eclipse Henry C. Courten (New York) and E. M. Pittich (Tzech Republic) did semilar experiments to detect sun-grazing comets.

June 30, 1973 Observation of rainbow during total solar eclipse. Observation from a chartered Chessna plane and at an elevation of 11500 feet: About three minutes before totality, a rainbow was seen to the west. The rainbow was very easy to see and the colors were quite brilliant. After totality a sundog (mock sun) was seen. These were very interesting phenomena. From the account The June 30, 1973 Total Solar Eclipse From Suriname, South America by Michael Reynolds in ref. Solar and Lunar Eclipse Observations 1943 - 1993 edited by Francis Graham (1995)

June 30, 1973 Roger Tuthill and Harvard astronomer Donald Menzel received a Legion of Merit award from the president of Mauritania for educating the local population about the eclipse. (ref. SaT 12/99).

June 30, 1973 Scientists use a Concorde supersonic passenger jet flying 1250 miles (2000 km) an hour over Africa to extend the duration of solar eclipse totality to 74 minutes, 10 times longer than can be observed from the ground. The Moon's shadow moves over the Earth at over 3000 km/h. The white corona was studied on board of the Concorde 001. (ref. L Astronomie SAF, 4/1975 p 149)

June 30, 1973 Several teams of scientists studied the reactions of people in Africa and South America were surprised to discover the similarity of traditions in places so far apart.

June 30, 1973 Picture of Moon next to eclipsed sun in National Geographic, page 469, October 1974: Earth's Lunar companion passes almost before the sun on June 30, 1973, as seen by a groundcontrolled camera while Skylab was unmanned. Skylab's position here makes the bodies appear out of alignment.

June 30, 1973 Last total solar eclipse with a maximum duration of totality longer than 7 minutes between year 0 and 4000. The eclipse was visible in Africa. The next total solar eclipse withn a duration of totality longer than 7 minutes will be on 25 June 2150 in the Pacific Ocean. Thereafter it will be 5 July 2168 in the Indian Ocean. Ref. More Mathematical Astronomical Morsels by Jean Meeus; Willmann-Bell, 2002.

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

Best regards,

Patrick and Joanne

solareclipsewebpages@btopenworld.com
http://solareclipsewebpages.users.btopenworld.com

SECalendar

SECalendar for May—Gregorian Calendar

From: Michael To: solareclipsewebpagesSENL200306btopenworld.com Date: Thu, 01 May 2003 14:29:10

Hi Patrick, Regarding May 03, 1715 in the May Calendar:

A minor typo – the Gregorian Calendar was adopted in Britain and its colonies in 1752. Cheers, Michael

John Herschel (1837-1921)

John Herschel, son of John Herschel and grandson of William Herschel, was a military officer. He was also a third-generation astronomer. Captain Herschel (in India) observed the total solar eclipse of 18 August, 1968, on behalf of the Royal Society. Doing so, he was among those who first witnessed the hydrogen spectrum in a solar prominence. Others included Jules Janssen and James Tennant. Herschel later successfully used a prism of red glass without a slit to see chromospheric lines. He observed hydrogen in the photospheric spectrum not long after Norman Lockyer. Herschel saw the flash spectrum during the eclipse of 12 December, 1871, the year after Charles Young reported on it.

SEScannings

SENL Index May 2003

Dear all, Please find herewith the Index of the May 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 .../... 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 solareclipsewebpages SENL200306btopenworld.com

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

Update to NASA Eclipse Home Page

From: Fred Espenak To: SOLARECLIPSESSENL200306AULA.COM Date: Thu, 01 May 2003 20:44:04

Update to NASA Eclipse Home Page Greetings to all, The content and links on the NASA Eclipse Home Page have increased steadily over the first seven years of its existence to the point where the home page has become bloated and difficult to navigate. Time for a major face-lift! I've broken most of the content of the original Eclipse Home Page into four new pages:

1) Solar Eclipse Page - http://sunearth.gsfc.nasa.gov/eclipse/solar.html

This has all the old familiar solar eclipse related links, but reorganized in a more streamlined fashion.

2) Lunar Eclipse Page - http://sunearth.gsfc.nasa.gov/eclipse/lunar.html

Just like the solar eclipse page, the lunar eclipse page has its related links and has been reorganized.

3) Eclipse Resources Page - http://sunearth.gsfc.nasa.gov/eclipse/resource.html

This page has many related links and resources for eclipses.

4) Eclipse Home Page - http://sunearth.gsfc.nasa.gov/eclipse/eclipse.html

The new Eclipse Home Page is a slimmed down version featuring a summary of the most useful and most frequently visited links. It also offers faster access to planetary transits, solar system ephemerides, phases of the Moon, etc., Hopefully, it will allow users to quickly zero in the information they really need.

If you get a chance, please visit these new pages. Any feedback will be much appreciated.

Best regards, - Fred Espenak

SETalk

Video: News Clips of 20021204 SE.

From: Geoff To: SOLARECLIPSESSENL200306AULA.COM Date: Thu, 01 May 2003 12:23:07

Hey there, One of my friends who stayed in Sydney for the most recent Total Solar Eclipse took the initiative to record as many news and media clips relating to the eclipse as possible. It resulted in around half an hour, or perhaps 15 different news clips. Oh, and nearly everyone features Jay Pasachoff - including a rather funny (?) incident with a dog...

The video is my no means professionally done, but it does provide an interesting look at the way the media portrays such scientific/astronomical events. If anyone on this list is interested in obtaining a copy, I would be happy to make copies for people, provided we could work out a way to cover postage and video costs - may be expensive overseas? But I am unsure. Feel free to talk to me about it. --Geoff

From: Andrew J White

Just checking you got my e-mail or have you been inundated with requests for copies? Best wishes

Andrew White, 57 Pendle Gardens, Culcheth, Warrington, Cheshire, WA3 4LU, United Kingdom

http://www.vanda.demon.co.uk

From: Geoff

Andrew, I am very sorry for the lack of reply. I did receive the email, but have just been a bit busy! Actually, there has only been one or two requests so far.

I do not have a listing of whats on the tape, however I assume lots of it would be similar to yours, however I would be happy to send it as a trade for your one (also, you may include your totality video you took yourself, I'd love to see it!). As I said, don't expect much though, its very "cut & paste" like, with it erratically flipping between different news channels!

Anyway, currently I don't have a cord for my video player to work (I used it to record the transit of Mercury, but my cord has got lost somewhere at my uni, so I will have to find it), but I'll let you know when I get it sorted, so I can make some copies. --Geoff

Video camera for eclipses

From: farrSENL200306navegalia.com To: solareclipses-SENL200306aula.com Date: Tue, 20 May 2003 20:55:16

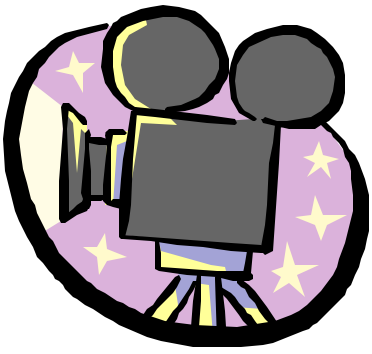
Hello all I would like to know a good videocamera, in miniDv format, to film eclipses. Thanks Francisco A. Rodriguez http://eclipse.astroeduca.com www.saro.org www.astroeduca.com

From: Joel Moskowitz

Any DV video camera that has the ability to manually control the focus, exposure and gain will do a fine job. It depends on your budget. If budget is no object, in the miniDV category I would recommend the Sony VX2000. If budget is REALLY no object, and you don't mind travelling with a pro camera, you might consider the Sony DSR 250 or DSR 300. These are 3 full pro camcorders, but the images are great. I personally use the Sony DSR500. Joel M. Moskowitz, M.D. 8 (total)solar eclipses and counting

From: Jay Friedland

Hi Francisco, I have used a Sony PC100 (PC101, PC105, PC110, PC120 are all similar) for several eclipses now with great results. Joel Moskowitz gets amazing video with his high end Sony deck but the PC100 weighs just about 500 grams and does a very competent job. I highly recommend a good 2x or even 3x teleconverter lens. I have a Sakar 2x and a Kenko 3x and I prefer the Kenko 3x lens (Kenko KUT-300HI) which gives you the theoretical equivalent of a 1500mm lens. You can see the video I shot for TSE2002 in Australia (with a 2x teleconverter) and the video from the Transit of Mercury two weeks ago with the Kenko 3x converter (digital zoom as well) at: http://gallery.cinemagic.com Cheers, - Jay p.s. Avoid digital zoom during an eclipse if you can and just use the optical for best results.



SETalk

Magnetic Declination

From: Assoc Prof J R Huddle To: SOLARECLIPSES-SENL200306AULA.COM Date: Fri, 02 May 2003 00:19:28

Magnetic Declination is the difference between True North and Magnetic North. Correction for this difference might become very important at the high latitudes from which many will observe this year's the solar eclipses.

The true or geographic north pole is, of course, at 90 degrees north latitude. The magnetic north pole is in Canada. It drifts around a degree or two per year, but currently, it is about 82 degrees North by 112 degrees West. The south magnetic pole is a couple hundred kilometers off the Adelie Coast of Antarctica, about 65 degrees South by 138 degrees East. (It is hard for me to tell whether that is in the Pacific or in the Indian Ocean.) Note that a line between the magnetic poles does not intersect the Earth's center; the Earth's magnetic field is not a perfect dipole, but has quadrupole, octupole and higher moments.

The magnetic declination is defined as follows: When one takes a bearing using a magnetic compass, one reads directly the magnetic bearing, and then calculates the bearing with respect to True North as:

True bearing = Magnetic bearing + Magnetic declination

Declinations greater than zero represent easterly corrections, those less than zero indicate westerly corrections. That is, a declination of -10 degrees, or 10 degrees West, as given on a navigational chart, means Magnetic North is 10 degrees west of True North. (This reminds me of a professor who once said, "I know this all sounds terribly confusing, but let me assure you, I'm lecturing it quite brilliantly.")

In the most heavily-populated parts of the world, the magnetic declination is typically only plus or minus a few degrees, but in the USA, it varies from about -12 degrees (12 West) on the East Coast to about +15 degrees (15 East) on the West Coast. Typically, the magnetic declination varies only a little over distances of several hundred miles. For instance, Paris, Venice and Berlin form a nearly equilateral triangle with a side of about 500 miles (800 km). In Paris, the declination is -1.5 degrees; in Venice, +1.6 degrees; and in Berlin, +1.9 degrees. In Europe, the magnetic declination is small enough that it is usually ignorable.

Washington, DC, Boston and Toronto form a slightly smaller triangle with a side of about 400 miles. In these cities, the declinations are -16.6, -15.6 and - 10.6 degrees, respectively. But note that where I live, in Annapolis, MD, only 30 miles east of Washington, the declination is -11.2 degrees: A difference of over five degrees in 30 miles. These corrections are large enough to be important in selecting a site from which to observe an eclipse or a transit. As you get closer to the magnetic poles, the declination varies more over smaller distances, and can become quite large. In Mirnyy, The declination is -86.9 degrees: If you don't correct your magnetic compass bearing, you'll be looking nearly 90 degrees west of where you should be looking!

A quick look at a map of Antarctica reveals why this declination is so large. Pull up Fred Espenak's web site about November's eclipse at http://sunearth.gsfc.nasa.gov/eclipse/OH/OH2003.html, and click on "Figure 6." In this figure, the South Magnetic Pole, at 65 South by 138 E, is about 200 km from Dumont d'Urville, near the top of the figure. Imagine yourself in Mirnyy, wishing to look toward Amundsen-Scott Station at the True South Pole. If you look in the direction your compass tells you is south, you'll be looking toward Dumont, but Amundsen-Scott will be off to your right! An easy mistake to make, I imagine, when you're cold.

Here is a short table showing the magnetic declinations for some places of interest to those who will observe solar eclipses in 2003. Since the tracks for these eclipses pass through high latitudes, we should prepare to encounter large declinations. The declinations were computed during a visit on 1 May 2003 to one of NOAA's web sites: http://www.ngdc.noaa.gov/cgi-bin/seg/gmag/fldsnth1.pl. At this site, you may submit the coordinates of a location, and the date. (Recall that the magnetic poles wander around a bit.) The program computes an estimated value for the declination, as well as other data about the Earth's magnetic field at that location and on that date. The authors claim that the results are typically accurate to half a degree. In the following table, latitudes, longitudes and declinations are all given in decimal degrees.

City Latitude Longitude Declination

Reykjavik 64.1 N 21.8 W -18.01
Durness 58.6 N 04.8 W -06.4
Jakobshavn 69.2 N 51.1 W -38.6
Baghdad 33.3 N 44.4 E +03.6
Kabul 34.5 N 69.2 E +02.5

Mirnyy 66.5 S 93.0 E -86.9
Maitri 70.8 S 11.7 E -27.5

Jim Huddle U. S. Naval Academy Annapolis, MD

From: Evan Zucker

(Continued on page 13)

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The saying Air Force navigators and pilots learn is "East is least, and West is best." We would calculate the true heading we needed to fly and then subtract east declination and add west declination. (Actually, we called it variation instead of declination.)

These diagrams make that easier to visualize:

http://www.ngdc.noaa.gov/seg/potfld/img/case1.gif
http://www.ngdc.noaa.gov/seg/potfld/img/case2.gif
http://avstop.com/AC/8-2.html

Here are maps showing magnetic deviation around the world: http://www.geo-orbit.org/sizepgs/magmapsp.html Evan H. Zucker

Transit of Mercury

From: BAA mailing list Date: Fri, 02 May 2003 07:40:25

BAA electronic circular No. 00095 http://www.britastro.org/

Don't forget that the transit of Mercury is coming up next Wednesday morning (May 7). It starts at around 0511 UT and finishes around 1033 UT. More details can be found in the April Journal (page 69) and the 2003 Handbook (page 8) and we hope to have some detailed notes on this list within the next few days.

This is the first Mercury transit to be visible from Britain since 1973 so don't miss this opportunity. As noted in the April Journal Peter Macdonald has been appointed as coordinator for this event. His address is given on page 122 of the April Journal but observations can also be sent via e-mail to the Mercury and Venus section director, Robert Steele at: RMSteeleSENL200306vencury.freeserve.co.uk Good luck with the weather! NickJames.

Mercury transit from La Palma

From: Fred Espenak To: SOLARECLIPSES-SENL200306AULA.COM Date: Fri, 02 May 2003 14:49:30

Dear Mercury Transit watchers - I got the following message about the Swedish group who have been doing such spectacular imaging of the Sun and sunspots from La Palma (http://www.solarphysics.kva.se/). They plan to do hi-res imaging of the transit of Mercury next week. These could very well turn out to be the best images of a transit ever obtained from a ground based observatory. Regards, Fred Espenak

Mercury transit images

From Mats Lofdahl <mats_lofdahlSENL200306yahoo.se> 30 Apr 2003

The Mercury transit on 7 May 2003 will be partly visible from La Palma. We plan to observe it with the Swedish 1-meter Solar Telescope from close to sunrise until last contact.

Weather, seeing, and computer networks permitting, we will display quasi real time images (updated every few minutes) at http://www.solarphysics.kva.se/Mercurytransit7May2003/ . Later the same day, we will make a movie available at the same site.

Delta T

From: Jean Meeus Date: Sat, 03 May 2003 07:51:35

On 2003 April 1, the difference Delta T between Dynamical Time and Universal Time was 64.53 seconds.

Eclipses and movies and TV

From: Joel Moskowitz To: SOLARECLIPSES-SENL200306AULA.COM Date: Mon, 05 May 2003

There have been a number of movies featuring TSE's mentioned on this list before. Just a heads up for anyone who watches TV. This Thurday's episode of "ER" will feature a solar eclipse. Joel M. Moskowitz, M.D. 8 (total)solar eclipses and counting

TSE 2002 - Images revisited FOLLOW-UP

From: Glenn Schneider To: SOLARECLIPSES-SENL200306AULA.COM Date: Thu, 01 May 2003 05:44:12

I recently (26 April 03) posted a note on a digital "poster" I created from imagery of TSE 2002, which can web "previewed" in much smaller (and lower resolution) form at:

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_02/TSE_2002_ALL_IN_ONE.jpg

I intend to soon have a few copies of these digitally printed, commercially, as a 36" x 42" poster (300 dpi native resolution), for myself and several others I observed TSE 2002 with, on photo quality glossy "opaque film" stock. I have

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"shopped around" and have found, locally, Kinko's competitive in price charging $10 per square foot for such prints on this high quality stock. I currently am planning to order 4 copies. With an order of 6 or more the cost is discounted 25%. If anyone on SEML would be interested in a copy send me an email directly (gschneiderSENL200306mac.com). The per poster-print cost cost, including insured shipping in the U.S. ($6.20) would be $90.50. I will happily arrange for shipping elsewhere, and would advise anyone of what any extra international postage to a specific would be. Cheers, Glenn Schneider

From: Fraser Farrell

Nice poster....but your label of "South West Australia" is incorrect.

For Australians this label refers to an approximately triangular region bounded by the towns of Geraldton (Feb 1998 ASE) and Esperance, and Cape Leeuwin. All in the state of Western Australia a.k.a. "Land Of The Prohibited Sun Filters".

Over 2000km away from your eclipse locale... cheers, -- Fraser Farrell

From: Glenn Schneider

Thanks, Fraser! Good Catch. Don't Know how I did that! Likely I was thinking of the trip I will make to SWA in November.

Of course, I will correct it BEFORE I have any large prints made! -GS-

From: Timo Karhula

Actually, the annular eclipse near Geraldton took place in February 1999. It was easy for me to get there since my father lives 40 kms from the zone of annularity. In order to not commit a crime, I drove from Geraldton to Roxby Downs and back (5800 kms) last December :-). After that journey, I took the flight back to Sweden. /Timo Karhula

Eclipse pic search for popular astronomy book

From: Govert Schilling To: SOLARECLIPSES-SENL200306AULA.COM Date: Mon, 05 May 2003 12:53:25

For a popular astronomy book, I'm looking for a nice photo of a total lunar eclipse (preferrably one that prominently shows the red color of the eclipsed moon), a photo of a total solar eclipse (with nice details in the corona), and a photo montage showing the progress of a solar eclipse. Foreground objects are welcome; pictures need to be visually appealing. Unfortunately, my publisher doesn't have a budget to pay for copyrights of amateur photos. However, proper credit will of course be given, and amateur astronomers whose pictures are used, will receive a copy of the book in the fall of 2003. If you think you have something available (as a digital file at medium-high resolution, smallest size at least 1000 pixels), please send it to my personal e-mail address, preferrably today (Monday) or tomorrow. -- Govert Schilling, mailto:mailSENL200306govertschilling.nl

Solar viewing equipment ban

From: F.Podmore To: Solar Eclipses Mailing List <solareclipsesSENL200306aula.com> Date: Wed, 07 May 2003 12:07:59

I don't remember seeing this link on SEML (forgive me if I missed it) but for those following these things, Timo Karhula sent me the link

http://users.bigpond.com/bmh/index.html

for the amazing situation in Western Australia (unless it's been changed now).

We had wonderful clear skies here in Harare for the Mercury transit today, after quite a lot of cloud yesterday. Now we're gearing up for May 16. Best wishes, Francis

From: Glenn Schneider

Well! I hope the Consumer Protection Commissioner, Mr. Partick Walker, who said: it is "ALWAYS unsafe to use optical instruments such as telescopes, binoculars, camera viewfinders, spectacles or sunglasses to view the Sun" is not at this moment on his way to Learmonth, Western Australia to issue fines to the Learmonth Solar Observatory (http://www.gong.noao.edu/sites/learmonth.shtml)staff who participated in the Global Oscillation Network Group's program to observe the transit of Mercury: http://gong.nso.edu/

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Boy, am I glad the T.O.M. was not visible from Tucson, otherwise I might have been tempted to observe it! The only images I will be working with will come from TRACE, and I see spacecraft were not on the list of Mr. Walker's precluded list of viewing instruments. Glenn Schneider http://nicmosis.as.arizona.edu:8000/

Clear skies at transit

From: K. Wiersema To: Solar Eclipses Mailing List <SOLARECLIPSESSENL200306AULA.COM> Date: Wed, 07 May 2003 14:24:07

Hello everyone, Here in Amsterdam the sky was clear throughout the transit of Mercury. We had just one small cloud, that took a couple of minutes to pass, but that was all. I stood on the parking lot of the astronomical institute with a Meade LX200 to see the transit. Over 200 people stopped by to take a peek at through the telescope. The transit proved to be a great way to promote astronomy. It was a great transit! I hope the weather will just as good on the 31st, at the annular eclipse... Greets, Klaas Wiersema

From: AlcovedbaseSENL200306aol.com

Hello, You can't know how lucky you were. I just envy you! Here in Boston (MA) I was at my observing site just before sunrise at 5:32 AM EDT. Of course there were the fog and the clouds. I set up my NexStar 8" anyway. I waited until the fourth contact, alas, in vain. Instead of the transit, I took pictures of the cloudy surroundings and the view toward the ocean. The sky cleared up completely just before 9 AM or so. It was nice to wake up so early though. I won't be sitting around here for the next year's Venus transit, that's for sure. I have to do something about that (nice!) New England weather..... Now I will check the webcasts. Congratulations to those who have seen it all. Haldun I. Menali Amateur Astronomer Investment Bank Senior Manager Boston, MA http://members.aol.com/astroalcove/index.html

From: Fred Espenak

The weather along the eastern coast of the USA was dominated by a low pressure system that kept most of the region under clouds and fog. Nevertheless, four of us (myself, Pat Totten, Lou May and his daughter) got a fine view of the transit this morning from North Beach, MD (about 25 miles south of Annapolis). We were located on the beach on the western shoreline of Chesapeake Bay. There was a lot of variable fog and a band of clouds along the horizon. In spite of these adverse conditions, the Sun and Mercury became visible about 5 minutes after sunrise at an altitude of less than one degree. Atmospheric seeing was certainly not great but remarkably good considering that the Sun was so low. The event ended just 25 minutes after sunrise with the Sun just 6 degrees above the horizon.

I couldn't help thinking of Pierre Gassendi and his words after becoming the first person to witness a transit of Mercury in 1631:

"The crafty god had sought to deceive astronomers by passing over the Sun a little smaller than was expected, and had drawn a veil of dark clouds over the earth, in order to make his escape more effectual. But Apollo, acquainted with his knavish tricks of infancy, would not allow him to pass altogether unnoticed. To be brief, I have been more fortunate than those hunters after Mercury who have sought the cunning god in the Sun; I found him out, and saw him where no one else had hitherto seen him."

I hope that some of my fellow Americans managed to catch a peek of the event through the clouds. This little appetizer has left me hungry for the main course next year - the 2004 transit of Venus! - Fred Espenak

From: Mike Simmons

This American got a great view of the entire event but not without traveling from the US west coast to Germany. I'm participating in the Astronomy Week activities organized by SEML participants Gernot Meiser and Pascale Demy in their home town of Saarlouis, Germany, near the borders of France and Luxemburg. There were many telescopes (12-15?) set up in a

(Continued on page 16)

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busy mall in the center of town. With extensive advertising there were many visitors -- estimated at 3000 by one participant -- including many school groups composed of children of all sizes (an ETX-90 set up close to the ground accommodated the youngest). There were three Coronado solar filters on various fine instruments brought by Markus Ludes of APM Telescopes from nearby Saarbrucken. My favorite was the Coronado-equipped Astrophysics refractor with Zeiss binoviewer. Markus also brought various binoculars including a Kowa 82 mm and Nikon image-stabilized. I manned the largest telescope -- Gernot's Meade 10-inch LX-200 -- and mangled German for hundreds of bemused adults and schoolchildren who enjoyed the views nonetheless. Conditions were good with a hazy sky, good seeing and comfortable weather. It was a wonderful event.

I agree with Fred -- this was a great warm up for the Venus transit a year and 32 days from today. I have also been lecturing about transits during the festivities here so I am in "transit mode" and can hardly wait for next year! Mike Simmons

From: Richard Monk

Apart from some cloudy skies at dawn and 1st/2nd contacts the whole apparition as observed from my back garden in Cambridge (UK) was cloud free. Some compensation for the wet Cornish skies for the TSE in August 1999.

My video recording (using an analogue camcorder (Sony TR3300) with a x1.5 teleconverter) has been downloaded onto my computer and a high resolution screen shows the Mercury spot convincingly.

I have greater hopes for three rolls of 35mm film taken through a Celestron C5 which go in for processing tomorrow morning.

Results will be posted on my web site in due course.

And now for the lunar on the 16th and the annular (in north) Iceland on the 31st. Clear skies (at last). Richard

From: Glenn Schneider

Well, Fred, I am happy to learn of you good luck! I can assure you that my basement neutrino telescope didn't have enough sensitivity to detect the passage of Mercury in front of the Sun during our night-time. (I hope others here will see my tongue embedded in my cheek as I writ the latter). Cheers,

From: Govert Schilling

Here in Utrecht, there were a few wispy clouds in the early morning, but the view of the transit was beautiful and rewarding. I very well remember the last time a Mercury transit would have been visible from the Netherlands, in november 1973, when I was 16 years old, just starting out in astronomy, looked forward to it very much, but it was raining all day.

I had the opportunity of describing the event at two different public radio programs. Fellow amateur astronomer Robert Wielinga, who directs the Museum Observatory Sonnenborgh in Utrecht, did the same for a few radio programs and the national television news. Promoted as a 'mini solar eclipse', the event grabbed a lot of attention here (I got some 2000 hits on my website, which carried links to a few webcams during the event), but some people seemed to be a bit disappointed as to the small size of the planet.

Anyway, this was a nice 'stepping-stone' to the lunar and solar eclipses that we're about to witness. --Govert http://www.govertschilling.nl

From: Jean-Paul GODARD

"I love Paris in May" Beautiful weather for the transit despite bad predictions.

Members of our astronomy association met this morning at the very beginning of the phenomenon (just after sunrise) and

(Continued on page 17)

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we enjoyed cloudless sky till last contact. a thin layer of cirrus did not alter the observation.... more than 10 "tubes" where used.

I successfully made a movie through a fluorite 102mm refractor with a "meade electronic eyepiece" connected (trough S-video) to a sony PC110 camescope for simultaneously image sharing (CCD screen) and movie storage (DV tape). This kind of setting seems possibly very useful for eclipse observation...

Reporters from french TV where on the site and we enjoyed a 1'45 sequence dedicated to transit the national evening news program. (very small) Part of my movie was included...

During this time, my wife, Martine, held presentations with binoculars for colleagues on her work site (Tarmac of Charles de Gaulle Airport). Cordialement, Martine & Jean-Paul ("We met in Moon's Shadow") tlouzeauSENL200306noos.fr jean-paul.godardSENL200306noos.fr

From: Babak A. Tafreshi

In Tehran we had clear sky for the most of the event unless for the very promissing moments of the last contacts. For me it was much different than my 1993 Mercury Transit experience that I just observe. Toady I set up my C5 telescope in Tehran international Book Fair with hundreds of enthusiast people gathered to observe and have exceptional moments while visting the fair. Other staff of Iranian Magazine Astronomy manage to shoot and show the transit through the Meade 10" LX200 telescope of educational Zafarniye observatory in northern Tehran. They were satisfied with the color and details of Orion color electronic eyepiece which transfer the image to LCD Video projector in a hall of audience. It was very good practise for many amateur astronomers in Iran who are planning for their first and most probable the last transit of Venus next year. Clear Skies Babak A. Tafreshi Editor at Nojum, Astronomy Magazine of Iran www.nojum.net

TOM 2003 MOVIE via TRACE

From: Glenn Schneider To: SOLARECLIPSESSENL200306AULA.COM Date: Wed, 07 May 2003 20:25:22

FYI: There is now a "White Light" movie of he T.O.M. on the TRACE public web site: http://chippewa.nascom.nasa.gov/TRACE/mercury_2003/mercury2003_WL_small2.mov

May take a while to download - but not to be missed! -GS-

Merc Transit Clear in Newfoundland

From: Rybrks1SENL200306cs.com To: SOLARECLIPSESSENL200306aula.com Date: Wed, 07 May 2003 17:11:14

Hi all, Thought I fell off the planet, eh? I kind of did.

Hopped a plane last minute despite crummy forecast for St John's NF, clear in Chicago while leaving, overcast Toronto for connection, beat the system to Newf with 2 am landing and clear dark skies. Beautiful (bright scars, minor sun pillar) but scary sunrise at 5:34am local with clouds blowing up in front. Sun was boiling for one hour with horrible "seeing" but this shimmering, boiling effect created fun effects with a decent size sunspot near Mercury...but still anxious after one hour. A fantastic prominence to the NE corner of the Sun (used 60 mm Coronado MaxScope) with about 1/4 to 1/3 solar radius length. Prominence blew itself apart in about one hour...very cool.

I had four powers (all Televue Nagler Type 6 oculars...they add 30% to cost but 200% to enjoyment...), 25x, 44x 57x and 80x..all had usefulness. Because of H2 alpha (chromosphere) C3 and C4 were 2 minutes 15 seconds "late". After my "late" C3, Merc would lose its outer edge and then regain it...recurred about four times lasting for about a minute, to describe: almost like H2 would suddenly subtly show to its outside. This was much less obvious effect at C4 in the inner edge of Merc but definitely apparent. Atmospheric seeing was excellent for C3 and C4. No tear drop effect, probably because of H alpha filter.

A wonderful 2 hour 29 minute joyride. Tried it in November 1999 but had overcast skies in Illinois. No longer a transit virgin.

Venus 2004 warrants H2 and neutral density for the photosphere teardrop effect. Cheers, all. Raymond Brooks

Fog, Clouds and More Clouds!

From: AlcovedbaseSENL200306aol.com To: SOLARECLIPSESSENL200306aula.com Date: Wed, 07 May 2003 19:24:21

Hi again, I have just updated my Recent Observations page (http://members.aol.com/astroalcove/recent.html) to share my disappointment with you. Again, congratulations to all who succeeded to see the transit! Clear skies (maybe one day!), Haldun I. Menali Boston, MA, NEW ENGLAND.

SETalk

TRACE Transit of Mercury Observations

From: Glenn Schneider To: SOLARECLIPSES-SENL200306AULA.COM Date: Wed, 07 May 2003 19:39:07

FYI - I have been advised by some of the folks on the TRACE project that a first "quick look" of the imaging sequences of the Mercury transit look good, including high temporal cadence imaging at ingress Jay and I had requested. There is a composite image on the public TRACE server, over the duration of the transit at:

http://vestige.lmsal.com/TRACE/POD/images/Mercury2003_combo.gif

which some may find interesting... Glenn Schneider http://nicmosis.as.arizona.edu:8000

From: Glenn Schneider

Since I have received three off-SEML queries I thought I should comment to the list...

That is the parallactic effect from the ~ 95 minute low-earth orbit of the spacecraft. TRACE's orbit is "Sun Synchronous" (or nearly so), and nearly polar (97 degree inclination, I think). So, its orbital plane is close to perpendicular to its line of sight to the Sun. The up/down "wiggles" are due to the the north/south parallactic component. There is an E/W component which results in, primarily, a temporal displacement (i.e., along the "X" axis) so images taken at a fixed cadence are not exactly uniformly spaced. That is not as easy to see, as your eye picks up the low frequency "wave" more easily than the effects of the phase modulation between points - but it is there. -GS-

From: DribalzSENL200306aol.com

What is the reason for the sinusoidal like pattern? Andrew

Mercury Transit - from Australia

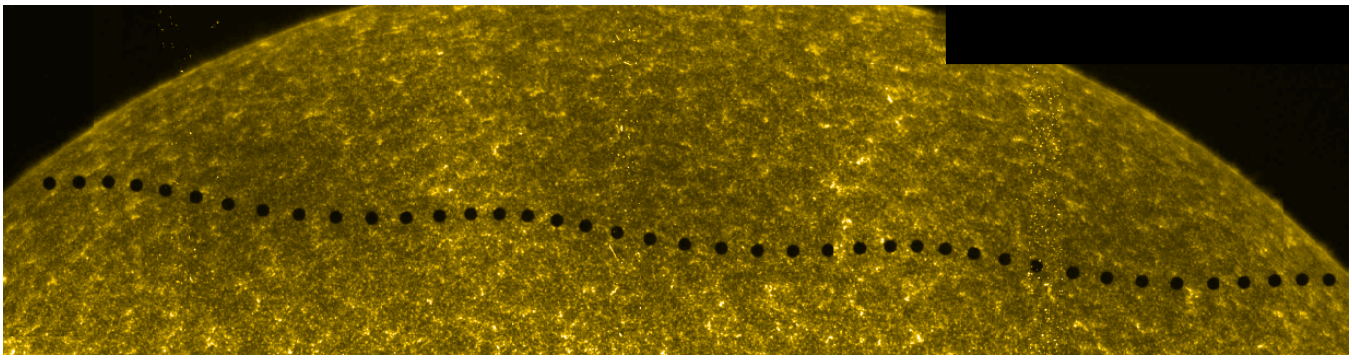
From: Geoff To: SOLARECLIPSESSENL200306AULA.COM Date: Wed, 07 May 2003 23:54:43

Well Australia had almost perfect skies for this transit! From Sydney, we were only able to observe the first 2 hours or the event, but it certainly was spectacular. We had very very light cloud at some points (which usualy resulted in beautiful sun halos + sun dogs, so I wasn't complaining), but other than that it was perfect.

Myself and a few others from the Astronomy group at my University set up numerous telescopes and other equipment to observe the event: We had a 6" and an 8" Newtonian with full aperture filters, 2 projection screens set up, as well as an 8" with full aperture filter, that was connected to a CCD camera which we outputted to a Monitor, so the event could be watched on the screen (which was a big success). We observed the event from the roof of one of our buildings, and suprisingly, just from a few emails and sheets of paper stuck around the uni, we would have had at least 100-150 people venture to the roof to have a look what was going on (this included astronomy students, physics students, physics staff, computing staff, geology students & staff, and astrobiology staff).

It was my first transit ever observed, and I could not believe how perfectly round Mercury looked against the Sun! I had always expected it to look slightly blurry, but the silhouette was perfect! It was certainly a lot more interesting than I had imaged - I felt like I re-lived the "first contact" and first partial stages of a solar eclipse, though obviously it wasn't as stunning visually. Photographic images should be available within a week or so. --Geoff

Trace transit Mercury2003_combo



SETalk

Mercury transit fogged out

From: Assoc Prof J R Huddle To: SOLARECLIPSES-SENL200306AULA.COM Date: Wed, 07 May 2003 19:14:12

We were in Annapolis, Maryland, on the east coast of the USA, about 25 miles north of Fred Espenak, et al. Fifteen minutes before sunrise, it looked like the fog might start to burn off, but starting about sunrise, the fog started getting steadily thicker. By the time the transit ended, it was so thick we could only see a few tens of meters. We never saw the sun.

We had with us two Questar 3.5-inch scopes, one with a full-aperture solar filter, the other with an off-axis partial aperture filter. We also had Nikon 7X50 and Canon 10X30 binoculars. The Canon binox are image-stabilized. We hoped to get a good answer to the question, what's the minimum aperture that will allow one to see Mercury's silhouette? Guess we'll have to wait until 2006 for that. Jim Huddle

From: Jean-Paul GODARD

Using 50mm binoculars (7x50) with mylar obstruction , Mercury was clearly visible knowing its position even by untrained observers.

From: Peter Tiedt

Here on the East Coast of South Africa, wx conditions were excellent, and the whole transit was visible.

Of course it clashed with day-to-day work activities, but I managed to sneak a peek several times during the day.

Using 8 x 21 and 10 x 50 binoculars.

In the 10 x 50's the transit was clearly visible if you knew where to look, and in the 8 x 21's I found it barely discernable.

From: Mike Murphy

Using an old 60mm refractor with Baader solar film filter on a holder that stops it down to 50mm, Mercury was clearly viible. It was a more satisfying view when I switched to projecting the Sun's image, though.

A nice transit, my first and most enjoyable, much more so than I thought it would be. - Mike in the UK.

Mercury transit event pictures wanted!

From: Mike Simmons To: SOLARECLIPSES-SENL200306AULA.COM Date: Thu, 08 May 2003 15:47:07

If anyone has images of their Mercury transit observations or events they can send me before Saturday morning UT I would appreciate it. I am in Saarlouis, Germany with list members Gernot Meiser and Pascale Demy and on Saturday, 10 May I will be giving a talk for Astronomy Day on the observation of the Mercury transit around the world (the part that could see it, that is). I don't need images of the Sun and Mercury unless it's something very unusual (I will be looking for Geoff's image soon) but would like to have photos showing people observing the transit, especially public events. Any size, quality and format is fine; I'll be giving the presentation from the computer at 1024x728 resolution on a large projection screen in a theater that seats several hundred. Thanks all! Mike Simmons

Transit of Mercury from Gibraltar

From: solareclipsewebpagesSENL200306btopenworld.com To: SOLARECLIPSESSENL200306aula.com Date: Thu, 08 May 2003 18:54:52

Dear All, Joanne, Laura and I observed the Transit of Mercury from Gibraltar. With sunrise at 5h27 we missed contact I and II, but we had a wonderful sunrise above the sea. It remained clear. Clouds came just at Tmax around 7h52 and we could observe the transit in between the clouds. Though, we missed contact III and IV due to the clouds. After 1993 and 1999, this was our 3rd Transit of Mercury. We cannot wait for next years' transit. Cheers, Patrick, Joanne and Laura from Gibraltar airport

Picture of TOM by PP

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Transit timings and Sky&Telescope

From: F.Podmore To: Timo Karhula <timo.karhulaSENL200306se.ibm.com> Cc: Solar Eclipses Mailing List <solareclipsesSENL200306aula.com> Date: Thu, 08 May 2003 09:32:47

Hello Timo - I saw in the May 2003 Sky&Telescope magazine article on the Mercury transit that two people wanted contact timings and images sent in, Roger Sinnott and ???. I suppose everyone on the SEML list know that, but just in case they didn't, they do now. Sorry, I don't have the article with me to give you the two email addresses - can someone else supply them? The second person was also asking for video and photographic images. Francis

On Thu, 8 May 2003, Timo Karhula wrote:

> Hi folks, The Mercury transit was visible quite beautifully here in southern Sweden (through more or less thin clouds). At 7 am local time (5h UT) it looked promising with the sky almost clear. The clouds grew thicker gradually but at times they dissipated. Equipped with my first 2.4-inch departure-store refractor from the 70's, I saw Mercury as a puny spot with 57x magnification after 2nd contact. Sometimes, the sun was not seen at all behind the clouds or it looked very fuzzy. With my analog video-camera and using 18x optical magnification, I could just make out Mercury on the solar disc. The planet was about half the size of the elongated sunspot near the center of the sun. The sunspot was visible without magnification through solar viewing glasses but Mercury eluded me.
>
> My friend in Västerås, Sven-Erik Persson, told me that the Swedish television was there making a short part of a news-program and he asked me if I could come over! He was using a homemade 8 inch f/8 Dobsonian telescope with a full aperture Astro Baader Solar filter. With his telescope, Mercury was a like tiny, pitch-black, perfectly round "bullet". At the end, the sun was covered by high cirrus and a halo circled our day-star. Mercury was still easily seen with the instrument. The television reporters made interviews with us during the transit and it was broadcast twice on the regional news the same evening.
>
> I visually timed the 3rd and 4th contacts as seen from Västerås (120 km W of Stockholm; latitude +59.62 deg N, longitude +16.55 deg E) employing 89x magnification. Sven-Erik was my timekeeper using a radio controlled "time cube".
>
> 3rd contact: 10:28:02 UT
> 4th contact: 10:32:23 UT
>
> The first timing has an accuracy of about + / - 2 seconds. The 4th contact was more difficult to time because it was not easy to judge when the limb of Mercury was no longer seen. The data compared to the predicted contact times in Stockholm differed by about 1 and 4 seconds, respectively. During 3rd contact, I could for a moment see the "black drop" effect. Higher magnification would certainly have shown the effect more clearly. My next "real" solar eclipse will be the annular in Iceland on May 31. Actually, this transit was technically also an annular solar eclipse! /Timo Karhula

From: McCann, Stephen

Francis, Yes sure, as stated in the May edition of S&T :

Transit reports to Roger Sinnot. email : rsinnottSENL200306skyandtelescope.com

Please include lat & long to nearest arcminute, telescope aperature, magnification or diameter of solar disk if projected.

Timings are also sought after by :

John Westfall Jr. (Transit coordinator of AALPO) PO Box 2447 Antioch CA 94531-2447 USA email : 73737.1102SENL200306compuserve.com

He welcomes drawings and videos/photos of contacts. ==== Kind regards Stephen Southampton UK

PS : Nice transit also here on the south coast of the UK.

From: McCann, Stephen

AALPO = American Association of Lunar and Planetary Observers www.lpl.arizona.edu/alpo Kind regards Stephen

Transit report - Belgium

From: Nicki Mennekens To: solareclipsesSENL200306aula.com Date: Fri, 09 May 2003 15:44:17

Hi everyone, Sorry I'm a bit late, but I've been very busy the last couple of days... Here in Belgium, the transit was great! Not a single cloud during the whole event. By the way, I personally found our little Mira's webcast (http://www3.mira.be/mercurius-en/webcam.html) one of the best on the web. I'm looking forward to the upcoming eclipses, espacially the May 31st. Let's hope the weather is just as fine as yesterday! Grtz, Nicki Mennekens

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And now a lunar transit!!

From: F.Podmore To: Solar Eclipses Mailing List <solareclipsesSENL200306aula.com> Date: Fri, 09 May 2003 15:49:26

If you haven't seen it already, take a look at http://antwrp.gsfc.nasa.gov/apod/ap030509.html Francis

TEXT

International Space Station in Transit Credit & Copyright: Tom Laskowski Explanation: A stunning telescopic image of the International Space Station crossing in front of an eight day old Moon, this picture was captured on April 11th. But while Wednesday's leisurely transit of Mercury across the Sun entertained observers all over the dayside of planet Earth, the audience for this lunar transit was more restricted. Like other satellites in low Earth orbit, the space station moves quickly through the sky. Glinting in the sunlight near sunset and sunrise, its path strongly depends on the observer's longitude and latitude. So, well-placed astronomer Tom Laskowski tracked the orbiting space station from a site near South Bend, Indiana, USA and recorded a digital movie of the fleeting, dramatic event. This single frame from the movie has been enhanced to bring out detail in the space station. Seen below the lunar terminator at the lower left, the International Space Station appears here at a distance of just over 400 kilometers, with the Moon nearly 400,000 kilometers away.

lunar transit isstrans_laskowski

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The *ultimate* eclipse combination ...

From: Daniel Fischer To: SOLARECLIPSESSENL200306AULA.COM Date: Fri, 09 May 2003 16:25:41

Francis Podmore is asking, "could Jean Meeus tell us if and when it is ever possible to have a real double transit of Mercury and Venus crossing the Sun together? They must line up with the Sun sometime..."

But what about the most amazing combination eclipse imaginable: an annular one, with Venus and Mercury transiting at the same time, one to the left of the New Moon at mid-eclipse and one to the right?!

I've wondered for some time whether such a constellation is happening during the existence of the Solar System - to guess the chance, would one just multiply the probabilities of having the planets transit and an eclipse taking place at a given moment, or would one also have to take care of subtle beat effects of Mercury's and Venus' transits and solar eclipses, if there are any?

Daniel Fischer (who saw the whole show from near home in Germany - with the 1st contact through fog that incidentally made for *much* better seeing than during the 4th contact when the Sun was 5 times higher in the sky).

P.S.: A collection of links to be best (or most unusual) pictures of the Transit is still growing at http://www.astro.uni-bonn.de/~dfischer/mirror/254.html

Mercury wavy line

From: Dale Ireland To: "APML (APML)" <astro-photoSENL200306seds.org> Cc: "Solar Eclipse List (solar eclipse list)" <SOLARECLIPSESSENL200306aula.com> Date: Fri, 09 May 2003 19:41:22

Hello Can someone explain to me why Mercury produced a wavy line across the Sun's disk during the transit. I would expect to see a curved line because of the earth's rotation during the event and the Earth's north pole being tilted toward the Sun but the line has at least two waves in it. Dale

From: Dale Ireland

Hi No I am talking about images taken from earth, like this one http://users.pandora.be/create/mercury.htm Dale

From: Govert Schilling

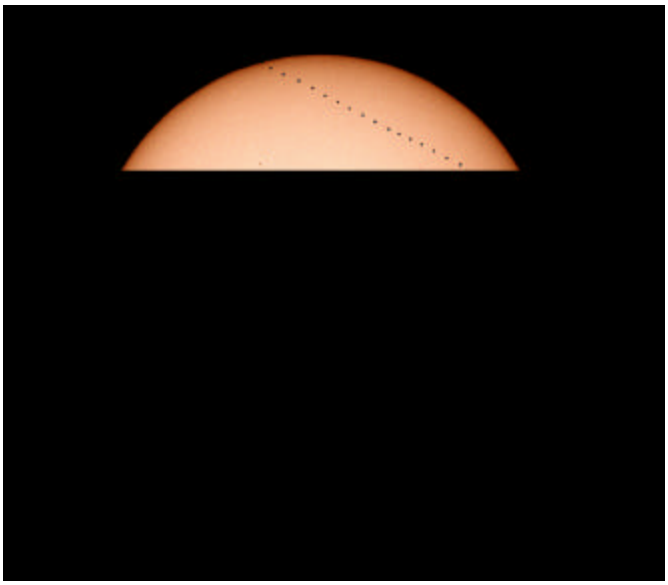
Dale -- I've also seen this picture, and I think it is a computer-generated composite, in which not enough care has been taken with proper alignment etc. --Govert http://www.govertschilling.nl

From: Glenn Schneider

Hi Dale, I presume you are talking about a ground-based (not Earth polar orbit) view? If so it wouldn't (and didn't) make a "wavy line". Here is a carefully co-registed composite taken from Udaipur, India , one of the three GONG sites which observed the transit, and from where the whole transit was visible:

http://gong.nso.edu/mercury_transit03/images/UDcomposit.jpg

The composting co-registered the images on the Sun, so you can see the rotational smearing of the Sunspots (less pronounced near the limb - of course), but if you look carefully (or hold up a straight edge) you can see the "curved line" you did expect. -GS-



mercury wavy line dominique dierick untitled

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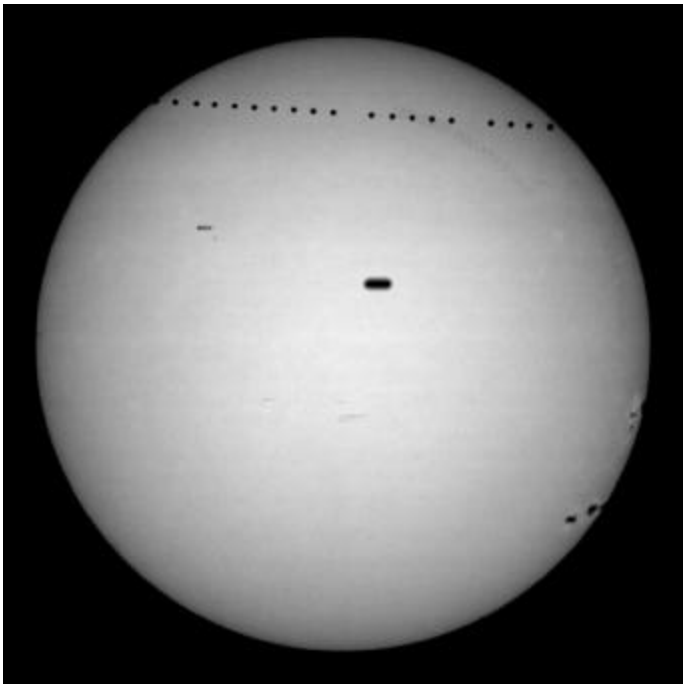

mercury wavy line UDcomposit

Transit of Venus Bibliography

From: Gent van R.H.To: HASTRO-LSENL200306LISTSERV.WVU.EDU Date: Wed, 07 May 2003 17:20:20

Hi, Today's transit of Mercury across the Sun serves as an advance notice of the approaching transit of Venus across the Sun on 8 June 2004.

This appears to an opportune moment to announce my bibliography on the past transits of Venus at:

http://www.phys.uu.nl/~vgent/venus/venustransitbib.htm

During the next months I will be adding many more references with web links and I would be grateful for any additions and corrections that have escaped my notice.

At a future date my bibliography will probably be absorbed into a larger database on the historical transits of Venus that several members of the IAU Transit of Venus Working Group are compiling at the moment. * Robert H. van Gent *

From: John W. Briggs

Here, Robert, is another Web site relating to some specific details of the 1882 Transit of Venus:

http://canopus.saao.ac.za/~wpk/tov1882/tovwell.html -- JWB. John W. Briggs University of Chicago Engineering Center, Yerkes Observatory

From: Gent van R.H.

Hi, Thanks for the web ref. I will add it to my bibliography. Best wishes,

Modern Solar Telescope Network's View of Mercury Passage Will Help Students Use Web To Recall Historical Era

From: Ron Baalke To: HASTRO-LSENL200306LISTSERV.WVU.EDU Date: Tue, 06 May 2003 15:59:17

http://www.nso.edu/press/mercury_transit.html

IMMEDIATE RELEASE: May 5, 2003 Contact: Dave Dooling National Solar Observatory P.O. Box 62 Sunspot, NM 88349 505-437-2294 - doolingSENL200306nso.edu

Modern solar telescope network's view of Mercury passage will help students use web to recall historical era

A global network of telescopes designed to watch the Sun's atmosphere pulsate will be pressed into service on May 7 to help students recreate early measurements of our solar system.

The telescopes will record the transit of Mercury as it crosses in front of the Sun. Transits once were the most valued of astronomical events, a rare chance for astronomers to size up the solar system. Today it is an opportunity to involve science teachers and students in studying both the Sun and mathematics.

The observations will be made by the National Solar Observatory's Global Oscillation Network Group (GONG) telescopes located in Australia, India, and the Canary Islands.

"We were approached by a French colleague, Professor Michele Gerbaldi of the Institut d'Astrophysique in Paris, Maitre de Conferences at the University of Paris-Sud, Orsay," explained Dr. Cliff Toner, the GONG scientist who is spearheading the transit observations. "She wanted to redo the work of a French expedition in the late 18th century to measure the scale of the solar system with modern data of the transit of Venus, observable next year, the one of Mercury this year being used as preliminary just as it has been the case in the 18th century. It has tremendous historical

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value, and it is awesome what those people were able to accomplish."

Transits occur when Mercury or Venus passes between Earth and Sun. The timing is complex and depends on the relative motions of Earth and the other planet. Mercury transits in May at intervals of 13 and 33 years, and in November at intervals of 7, 13 and 33 years. GONG observed the last transit of Mercury on Nov. 15, 1999. Venus is less frequent, only six times in the last four centuries. The last was 1883; the next will be very soon, on June 8, 2004.

In the 17th century, pioneering work by Jeremiah Horrocks (an English astronomer) and James Gregory (a Scottish astronomer) demonstrated that the transits could be used to determine the Earth-Sun distance. In 1716 Sir Edmund Halley published "A new Method of determining the Parallax of the Sun, or his Distance from the Earth" by using many observational stations spread over the world. But Halley's own expedition to the South Atlantic in 1677 to observe the transit of Mercury came to naught when bad weather in England deprived him of the other half of the observations.

Several nations mounted expeditions in 1761 and 1769 to observe the transits of Venus and produced measures of the Earth-Sun distance. Using those data, Joseph Jerôme Lalande of France in 1771 calculated the Earth-Sun distance at 153 million km (95 million miles), just 3.4 million km (2 million miles) off the correct number, 149,597,871 km (92,750,680 miles). Today, radar ranging to the planets and tracking of deep space probes have relegated transits to reminders of the pioneering days of astronomy.

But GONG's constant watch on the Sun means that we don't have to mount a special expedition. Three GONG stations will see the 5-hour, 19-minute transit. It starts at 05:12:56 Universal Time (12:13 a.m. EDT) when Mercury's limb appears to touch the Sun's limb, and ends at 10:31:46 UT (5:13 a.m. EDT) when Mercury clears the Sun. Teide will see the first 3-1/2 hours (from sunrise), Udaipur, India will see the entire transit, and Learmonth, Western Australia, will see the last 3-1/2 hours (to sunset). Learmonth and Teide will overlap each other by almost 2 hours. So while the transit will occur entirely at night for half the world, people anywhere should be able to see it.

CAUTION: It is exceptionally dangerous to view the Sun without the right equipment. Blindness or painful, permanent eye damage will result.

"While we don't expect the size of the Universe to change as a result of these measurements" said Dr. John Leibacher, the GONG program director in Tucson, AZ, "it is an exciting spectacle to watch, and it is of important practical use to us in establishing the precise orientation of the images taken with different GONG telescopes around the world."

GONG was designed to measure the pulsations of the visible surface of the Sun's atmosphere as it rings like a bell with millions of different harmonic notes. These vibrations are our only way of probing the Sun's interior, just as earthquakes probe Earth's interior. Six identical GONG stations around the globe monitor the Sun full time: Big Bear Solar Observatory, Big Bear Lake, Calif.; Learmonth Solar Observatory, Australia; Udaipur Solar Observatory, India; Observatorio del Teide, Canary Islands; Cerro Tololo Interamerican Observatory, Chile; and Mauna Loa Observatory, Hawaii. Thus, the Sun never sets on GONG, making it uniquely suited to catching a transit whenever it may occur.

Leibacher explained that software has been developed for the GONG network computers to extract one image every 15 minutes from each site as Mercury crosses the Sun and post the image in near real-time on the GONG web site. Only 25 or so images will be posted for this quick-look, stop-motion movie of the transit. Toner cautioned that the real-time connection with Udaipur is new and may experience some interruptions. The connections with Learmonth and Tiede, though are working well and the overlap between the two will ensure continuous coverage.

Over the next two months, as data tapes arrive from the GONG sites, the GONG team will prepare an education CD-ROM with raw transit images taken every minute for a total of more than 300 images.

"We'll provide the raw data from the white-light images, so the students can learn what is the triangulation method and how to measure the Earth-Sun distance from planetary transits and be prepared for the transit of Venus, next year which is the one allowing a measure of the astronomical unit," Toner explained. Reproducing the timing aspect of the early experiments may not be possible because each image will have an integration time of one minute, too long for making precise contact measurements. The CD-ROM will include instructions on how to use the images and data.

"This is the first time that we have tried something like this, so everyone here is pretty excited," said Leibacher, "and it's just a warm-up for the transit of Venus next year."

(Continued on page 25)

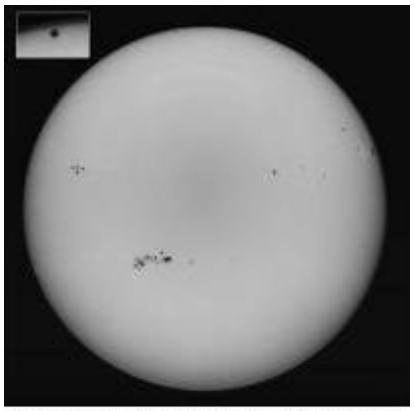
SETalk

GONG is operated by the National Solar Observatory under contract to the National Science Foundation.

For additional information on GONG and the 2003 transit of Mercury, visit: http://gong.nso.edu/mercury_transit03. For a larger image of the 1999 transit, visit the NOAO Image Gallery.

Editor's note: Historical and technical information on transits is drawn from the transit pages maintained by Fred Espanak of NASA's Goddard Space Flight Center: http://sunearth.gsfc.nasa.gov/eclipse/OH/transit03.html.

Halley's paper on determining the Earth-Sun distance is republished at http://sunearth.gsfc.nasa.gov/eclipse/transit/HalleyParallax.html.



The last transit of Mercury, as seen by the Solar Vacuum Telescope at Kitt Peak, AZ., on Nov. 15, 1999.

TEXT

National Solar Observatory Press Releases Mercury Transit 2003

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(Continued on page 26)

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CAUTION: It is exceptionally dangerous to view the Sun without the right equipment. Blindness or painful, permanent eye damage will result.

"While we don't expect the size of the Universe to change as a result of these measurements" said Dr. John Leibacher, the GONG program director in Tucson, AZ, "it is an exciting spectacle to watch, and it is of important practical use to us in establishing the precise orientation of the images taken with different GONG telescopes around the world."

GONG was designed to measure the pulsations of the visible surface of the Sun's atmosphere as it rings like a bell with millions of different harmonic notes. These vibrations are our only way of probing the Sun's interior, just as earthquakes probe Earth's interior. Six identical GONG stations around the globe monitor the Sun full time: Big Bear Solar Observatory, Big Bear Lake, Calif.; Learmonth Solar Observatory, Australia; Udaipur Solar Observatory, India; Observatorio del Teide, Canary Islands; Cerro Tololo Interamerican Observatory, Chile; and Mauna Loa Observatory, Hawaii. Thus, the Sun never sets on GONG, making it uniquely suited to catching a transit whenever it may occur.

Leibacher explained that software has been developed for the GONG network computers to extract one image every 15 minutes from each site as Mercury crosses the Sun and post the image in near real-time on the GONG web site. Only 25 or so images will be posted for this quick-look, stop-motion movie of the transit. Toner cautioned that the real-time connection with Udaipur is new and may experience some interruptions. The connections with Learmonth and Tiede, though are working well and the overlap between the two will ensure continuous coverage.

Over the next two months, as data tapes arrive from the GONG sites, the GONG team will prepare an education CD-ROM with raw transit images taken every minute for a total of more than 300 images.

"We'll provide the raw data from the white-light images, so the students can learn what is the triangulation method and how to measure the Earth-Sun distance from planetary transits and be prepared for the transit of Venus, next year which is the one allowing a measure of the astronomical unit," Toner explained. Reproducing the timing aspect of the early experiments may not be possible because each image will have an integration time of one minute, too long for making precise contact measurements. The CD-ROM will include instructions on how to use the images and data.

"This is the first time that we have tried something like this, so everyone here is pretty excited," said Leibacher, "and it's just a warm-up for the transit of Venus next year."

GONG is operated by the National Solar Observatory under contract to the National Science Foundation.
For additional information on GONG and the 2003 transit of Mercury, visit: http://gong.nso.edu/mercury_transit03. For a larger image of the 1999 transit, visit the NOAO Image Gallery.

Editor's note: Historical and technical information on transits is drawn from the transit pages maintained by Fred Espanak of NASA's Goddard Space Flight Center: http://sunearth.gsfc.nasa.gov/eclipse/OH/transit03.html. Halley's paper on determining the Earth-Sun distance is republished at http://sunearth.gsfc.nasa.gov/eclipse/transit/HalleyParallax.html.

Dave Dooling and Ruth A. Kneale | 05/06/2003 22:12:03

SETalk

Archives of Spaceweather.com

From: F.Podmore To: Solar Eclipses Mailing List <solareclipsesSENL200306aula.com> Date: Mon, 12 May 2003 15:27:07

I forgot to ask - How do I go bacck to look at the Spaceweather.com webpage for any previous date? It's not obvious to me on the current page. Thanks, Francis

Appearance of TLE 16 May 2003. Animations? ATSinclair

From: F.Podmore To: Solar Eclipses Mailing List <solareclipsesSENL200306aula.com> Date: Tue, 13 May 2003 09:00:48

Hello, I am concerned to establish what the lunar eclipse will look like from Harare (latitude 18 degres south) on Friday morning.

I have a printout of Fred's excellent webpage

http://sunearth.gsfc.nasa.gov/eclipse/LEplot/LEplot2001/LE2003May16T.gif

and what I think I should do is:

1. take the printout showing the moon moving through the Earth umbra,
2. face west(ish) (where the Moon will be setting)
3. hold the paper vertical in front of me, and rotate it through 98 degrees until the line marked N- ..... -S (= lunar spin axis) is tilted so that N is pointing towards the North celestial pole (which is 18 degrees below our horizon, and the S is upwards by the same angle.

Then on Friday morning the Moon will travel almost vertically upwards through the umbra, but the Moon will set before the eclipse is over.

Is the above reasoning correct?

Secondly: The animations of solar eclipses bt Andrew Sinclair (ATCinclair) are brilliant. Are there animations available for lunar eclipses, which can be adjusted for different viewer locations?

Thirdly: Can someone supply an email address for him - I want to thank him for his software and ask some questions. Many thanks folks. Francis

Lunar eclipse web sites?

From: Dale Ireland To: Solar Eclipse List <SOLARECLIPSESSENL200306aula.com> Date: Tue, 13 May 2003 16:33:29

Hello Does anyone know of scheduled live webcasts of this weeks eclipse? Dale

From: F.Podmore

Dale, See the end of Fred Espenak's webpage on the TLE - he lists two.

http://sunearth.gsfc.nasa.gov/eclipse/extra/TLE2003May15.html

From: Fred Espenak

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I want to add links on the NASA Eclipse Home Page for live webcam coverage of the May 15-16 lunar eclipse. Does anybody know of any links they can share? Thanks, Fred Espenak

From: Nicki Mennekens

Hi Fred (and all), I've got a couple of links to live coverage sites on my personal eclipse homepage:

http://members.lycos.nl/mennekens/eclips/engels/eclips_index_en.html.

Greetings, Nicki Mennekens Belgium

From: Francisco A. Rodriguez Ramirez

Hi all, SAROS Group (www.saros.org) will broadcast the next Total Lunar Eclipse from:

- Gran Canaria (Canary Islands, Spain) with webcam and Mexico in Live video

The url is http://live.saros.org. Best Regards Francisco A. Rodriguez Ramirez

Transit of Mercure as seen from France

From: Jean-Paul GODARD To: solARECLIPSESSENL200306AULA.COM Date: Tue, 13 May 2003 12:24:13

Here you have the web-page I made for my association "L'Uranoscope" located near Paris. (I'm the Webmaster).

http://perso.club-internet.fr/uranos/actu/transit030507/index.html

You can see members looking the one of the ten instruments spread on the site. Cordialement, jean-paul.

Transit Webcast

From: Michael Gill To: solareclipsewebpagesSENL200306btopenworld.com Date: Mon, 05 May 2003 19:51:16

Patrick/Fred Here is another transit webcast URL for you: New Dehli, India – http://www.indiahams.com Clear skies, Michael

Mercury transit

From Astronomy.com

Images and reports of this morning's Mercury transit have already arrived. Contributing editor, Phil Harrington, wrote that the forecast was a gloomy one for this morning's transit. Fortunately, the sky was clear as he woke at 4:45 a.m. EDT. Sunrise came and went with no sun but lots of fog. Roughly 10 minutes later, bright rays began peaking through the muck. At 6:00 a.m. EDT, he had a decent view, although the sun was still too dim through his telescope and its solar filter to photograph. By 6:19 a.m. EDT, the sky had cleared enough for him to begin taking photographs. The link below takes you to a composite image that holds three views Phil captured of the transit.

http://list.astronomy.com/UM/T.asp?A5.52.47.2.126016

The next two Mercury transit images come from the Royal Swedish Academy of Sciences.

http://list.astronomy.com/UM/T.asp?A5.52.47.3.126016

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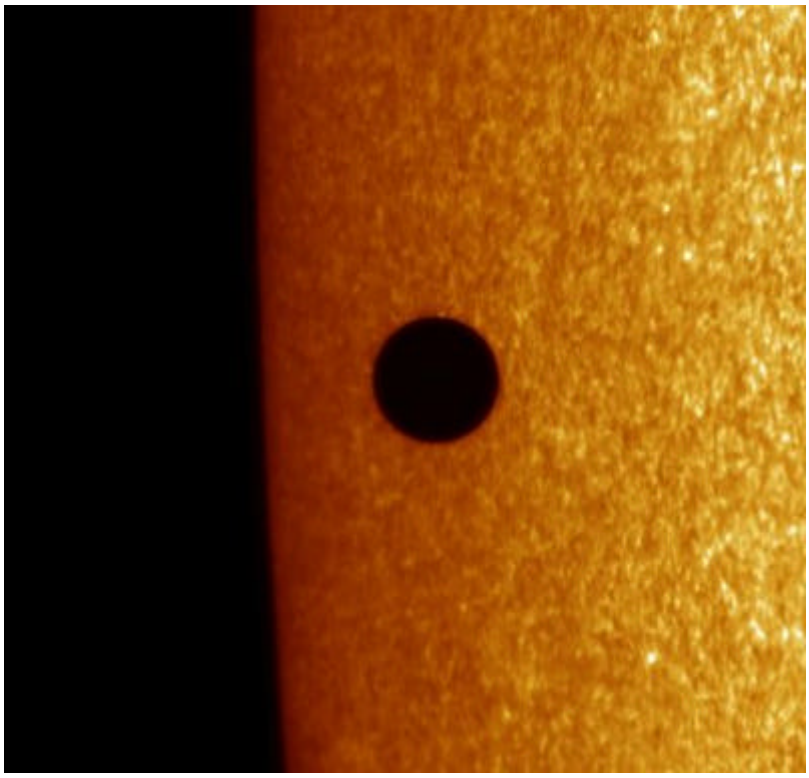
http://list.astronomy.com/UM/T.asp?A5.52.47.4.126016



transit of mercury swedish academy SSTTransit2

Double transit

From: Philippe JACQUOT To: SOLARECLIPSES-SENL200306AULA.COM Date: Thu, 08 May 2003 06:21:17

Hi all, The first event of the three in May was a success for a lot of astronomers in Europe. Good weather and magnific transit of Mercury. I take this photo during the transit, near Geneva...

http://astrosurf.com/studiosaros/Transit.html

Sorry, there is no translate, but the photo talking alone !

Clear sky for may 16 and 31! Philippe JACQUOT 5d 54m 32s - 45d 58m 22s Annecy - France

From: Evan Zucker

At 10:21 PM 5/7/2003, Philippe wrote:

I take this photo during the transit, near Geneva...

http://astrosurf.com/studiosaros/Transit.html

Sorry, there is no translate, but the photo talking alone !

For what it's worth, here's the translation provided by altavista.com's translation service. If nothing else, it may be good for a chuckle:

We were there several this morning, which with the eyepiece, which with the webcam, which to look at the spectacle by projection on a blank paper sheet...

Automatically, I turned over towards my case photo blotti behind Maksutov of 1000 mm which I had left in the lapse of memory, too occupied which I was to admire àux eyepieces of T200 the passage of first planet of the solar system in front of the star of the day.

Heat helping, the development had been put out of order, and I endeavoured to refine it with the left hand, the line instinctively posed to the release. Hardly the image become again Net that the fugitive vision of the silhouette of a plane cut the sun in its center.

(Continued on page 30)

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My finger pressed immediately on the button... An incredible coincidence, having made a success of only two images of this type in two years, helped well by the many air lanes which streak the sky with the top of my Savoyard dwelling. But this day Ci, with an enormous sunspot and the delicate black Mercury ball... Fantastic!!! -- EVAN

From: Sharon Grey

Dear Evan, I'm generally a reader on the list and never before a contributer, but thank you very much for forwarding Phillippe Jacquot's 'double transit' image. It's sensational. All best from Sydney, Sharon Grey

From: Jean-Paul GODARD

That surely will be the next APOD (astronomy picture of the day) Felicitations Cordialement, jean-paul. godardSENL200306noos.fr

From: Fraser Farrell

Philippe, Does France have a national cricket team? We need to do something better than what you can, to cure our jealousy... ;-) cheers, -- Fraser Farrell

From: Philippe JACQUOT

Fraser, It is the good solution ;-) I does not even know if there is a club of cricket in France! I espere to have as much chance in Scotland has the end of the month for the ASE. Regards, France

From: F.Podmore

Although the Altavista (or was it another software) automatic translation from Phillipe's French to 'English' was amusing, and he's added it to his webpage, could someone provide a better, clearer and more informative translation please? Thanks. It's still THE most incredible photo.


Transit de Mercure et passage d'un avion - 7 mai 2003 - MTO 1000mm et Nikon D1 - ©Philippe JACQUOT

We saw a couple of birds flying across the Sun but didn't have the camera ready at the time. Pity. By the way, what sort of plane was it?

Secondly, could Jean Meeus tell us if and when it is ever possible to have a real double transit of Mercury and Venus crossing the Sun together? They must line up with the Sun sometime.... Francis

From: Assoc Prof J R Huddle

Francis Podmore asked if, "...could Jean Meeus tell us if and when it is ever possible to have a real double transit of Mercury and Venus crossing the Sun together? They must line up with the Sun sometime...."

In order for there to be such a double transit, both Mercury and Venus would have to be at their nodes - that is, where

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their orbital planes cross Earth's own orbital plane (the "ecliptic" plane) - at the same time. Since these planets reach their nodes about one month apart, and the planets need to be within just a very few days of their nodes, there can be no double transit.

At least, not in our lifetimes. Just as the planets' perihelia precess, the axes about which they orbit also precess. Note that the plantets orbit about different axes, and those axes precess at different rates. One day, the nodes of Mercury and those of Venus could lie along a single line, or very close to a single line, and then a double transit could be possible. Jim Huddle

From: Peter Tiedt

Simple answer is NO. Never.

Their nodes are at different points of the orbit. Peter

From: Fred Espenak

In order for there to be such a double transit, both Mercury and Venus would have to be at their nodes - that is, where their orbital planes cross Earth's own orbital plane (the "ecliptic" plane) - at the same time. Since these planets reach their nodes about one month apart, and the planets need to be within just a very few days of their nodes, there can be no double transit.

It's interesting to note that the very first two transits predicted by Kepler were on 1631 Nov 07 (Mercury) and 1631 Dec 07 (Venus) - just one month apart! Pierre Gassendi observed the Mercury transit from Paris. He tried to observe the Venus transit one month later but was unsuccessful because the event occurred after sunset from Paris. At that time, the uncertainty in the times of transits was 1/2 day or more.

For more on the history of transits, I highly recommend Eli Maor's book "June 8, 2004--Venus in Transit". - Fred Espenak

From: Jean-Paul GODARD

According to Martine's aeronautical expertise, the plane might be a McDonell MD80 or MD 82... It is a question of length....

We are presently looking with the "spotters" to have full registration and age of captain....;-)) Cordialement, Martine & Jean-Paul

From: Fraser Farrell

F.Podmore wrote: could someone provide a better, clearer and more informative translation please?

Philippe used some poetic descriptions, which makes translation a lot harder. And my French is rusty...

In a nutshell: He was observing visually with several other people, getting great views through a T200 (a telescope??), and almost forgot about using his camera equipment. When he returned to his camera, its 1000mm Maksutov lens had warmed up and needed refocusing. Which he did left-handed. Meanwhile his right hand was holding the cable release - and just as he regained a sharp focus, the plane flew across the sun. Philippe has seen & photographed planes crossing the sun before, because he lives under some busy flight paths, so taking this picture was a reflex action for him.

We now await a *real* translation ;-)

> By the way, what sort of plane was it?

It looks like a Boeing 727 to me. These are about 47 metres long with a wingspan of about 33 metres; but note that both of these dimensions are tilted to the line of sight (if you're going to use the silouette to work out how far away the plane was).

(Continued on page 32)

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> Secondly, could Jean Meeus tell us if and when it is ever possible to have a real double transit of Mercury and Venus crossing the Sun together? They must line up with the Sun sometime....

Their orbital nodes are not aligned at this period in history. And I suspect it will be a very very long time before their orbital plane precessions will bring their nodes together.

If you want a double transit in this era, you should have been on Mars in 1984 (or again in 2060?) to watch the Earth & Moon transit the sun. Arthur Clarke wrote a short story about it. cheers, -- Fraser Farrell

From: Jean-Paul GODARD

Original Message ----- From: "F.Podmore" <podmoreSENL200306science.uz.ac.zw> could someone provide a better, clearer and more informative translation please? Thanks.

I tried to keep close to the original wording, but I made some little change to accomodate my limited vocabulary...

<<We were there several this morning, one behind the eyepiece, other with the webcam, others looking at the show by projection on a blank paper sheet...

With a stroke of luck, I returned to my camera case sheltered behind my 1000 mm Maksutov which I forgot for a while, too busy to admire at the T200 eyepiece the passage of first planet of the solar system in front of the star of the day.

Heat helping, my telescope was out of focus, and I tried to refine this with the left hand, the right one being instinctively positionned on the shutter release mechanism. As the image came in focus, a fugitive vision of the silhouette of a plane crossed the sun's center. My finger pressed immediately the button... An incredible coincidence, having made successfully only two times that kind of images in two years, well helped by the many air ways streaking the sky over my Savoyard residence. But on THAT day, with an enormous sunspot and Mercury as a delicate black ball... Fantastic!!!>> Cordialement, Martine & Jean-Paul

From: Gerard M Foley

I think it's a Regional Jet, either Canadian (Bombardier) or Brazilian (Embraer). Wonderful picture! Gerry

From: Jean Meeus

For the moment, such simultaneous transits are not possible.

Not only should Mercury and Venus be almost simultaneously in inferior conjunction. They moreover must be close to one the nodes of their orbits, and this is not possible because the lines of nodes of Mercury and Venus don't coincide. They make with each other an angle of 28 degrees. The consequence is that transits of Mercury can take place only during the first half of May or during the first half of November, while Venus transits can take place only during the first half of June or the first half of December.

But there is hope! The two lines of nodes slowly rotate, and for Mercury and Venus this takes place with different speeds.

In the beginning of the year 2000 the longitudes of the ascending nodes, measured from the (moving) vernal equinox were 48.3309 degrees for Mercury, and 76.6799 for Venus. The increase per century is +1.1861883 degrees for Mercury, and +0.9011206 for Venus. See the table on page 212 of the 2nd edition (1998) of my 'Astronomical Algorithms'.

So the ascending node of Mercury is gradually approaching the ascending node of Venus! But it will still take many centuries before the two lines of nodes are close enough together. The problem is complicated bij the fact that the two increases(resp. +1.1861883 and +0.9011206 per century) are not constant themselves!

A rough calculation shows that the two lines of nodes will coincide 108 centuries in the future. But already 90 centuries in the

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future the difference between the two ascending nodes will be 4 degrees, allowing simultaneous transits to be POSSIBLE from about A.D. 11000.

Whether such double transits will effectively take place, is another question, of course! Jean Meeus

From: Philippe JACQUOT

Hi all, It is exactly that, and I must also translate my page of the eclipse in the Australian'Outback which uses also this kind of sentences. In any case, thank you for your assistance and that for Jean Paul.

A little wink for those whitch will the next TSE in Antartica with the lanChile airbus A340 :

http://astrosurf.com/studiosaros/LuneA340.html

Perhaps it will be the same plane ;-)) --- Philippe JACQUOT

From: F.Podmore

Those of you who don't look regularly at www.spaceweather.com should have a look at today's page (12 May 2003) for another image of a jet and Mercury crossing the Sun. AND there are links to more, AND the ISS also silhouetted against the Sun!! And there's a gallery of images at

http://science.nasa.gov/spaceweather/planets/gallery_07may03.html

This one looks very much like Phillipe's image:

http://science.nasa.gov/spaceweather/planets/07may03/page3/Laszczynski1_labeled.jpg - is it?? Amazing how many things do cross the Sun.... Francis

From: Eric Gouhoury

Hello all, I've been following your exchanges for a pretty long time now, and I thank Patrick who accepted me on SEML. I've never written until now because of my english, and I had nothing to bring.

If I do today, it's because you got interested in Philippe's double transit picture (Hi Philippe ;-) I was as lucky as he when observing the transit, 800 km further north, near the Belgian border.

The picture is here : http://perso.wanadoo.fr/astro-eclipse/transit2003.html

A rough translation can be this one :

Mercury's transit before the sun took place on a Wednesday. Was it a good omen? (Wednesday = Mercredi = Mercurii dies, the mercury day). Following to the letter the last forecasts, the weather seemed to be willing to be nice to many european watchers, including the French northerns. Phenomenum followed up from the house backyard, first contact just seen over the trees, altitude 8°. The Mercury tiny black disk was clearly set out in front of the sun surface, even with a low magnification. 08h09 LT : when the uninvited guest emerged, the focus wasn't very good, I jumped over for the shutter as fast as possible... I had already missed two others.

Equipment : Meade ETX90, adapter lens William Optics 40 mm, JMB filter, digital camera Casio QV-2800.

A quick presentation to end : I'm 40 years old, computer engineer, living near Lille, up north of France. Fond of astronomy, especially eclipses, since a long time. But I have only seen 3 totals (1999, 2001 and 2002), 4 partials and no annulars. On May 31, I won't travel but I hope to be able to watch a beautiful sunrise partial eclipse, if the clouds allow...

(Continued on page 34)

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Clear Sky for all going to annularity, and for the others too!

Best regards. Eric PS : don't look for other pages, at the mo ment it's the only one

From: Govert Schilling

Jean Meeus calculated that it will take many thousands of years before simultaneous transits of Mercury and Venus can happen. I wonder if we also have to wait that long for another dramatic simultaneous event: a transit (of either Venus or Mercury) coinciding with a solar eclipse. Jean...? ;) --Govert http://www.govertschilling.nl

From: F.Podmore

Glenn asked where is the link about ISS crossing the Sun - the info I have is copied below - I hope that helps track it down.

It raises the ques tion again about how to access the archive of Spaceweather.com. I tried emailing Dr Tony Phillips but didn't get an answer - can anyone contact him? Francis

From: Jean Meeus

A few years ago, a Mr Cees Bassa, from the Netherlands, found that on 8059 July 19 there will be simultaneously a solar eclipse and a transit of Mercury. This is confirmed by the software Guide 7.0, although there may be some doubt about the simultaneity: the tidal acceleration of the Moon over 60 centuries is not accurately known, so very accurate calculations so far into the future are not possible. Jean

From: Jay Friedland

Hello all, Well a week has gone by and I finally got a chance to review my video of the May 7, 2003 Transit of Mercury. We were located about 3km northeast of Mansfield, PA and were treated to a perfect sunrise and about 20 minutes of the transit (the first few minutes were lost due to extinction and fog). Just before 3rd contact a bird flew right through the field of view! The same thing happened to us just before second contact for TSE 2002, with cockatoos flying across the sun. Feel free to check out the movies and stills at http://gallery.cinemagic.com The video was shot on a Sony PC 100 with a Kenko 3x teleconverter and digital zoom. The individual images show both maximum optical zoom and some digital zoom. Clear Skies, - Jay

Solar filter for Sony Hi8

From: solareclipsewebpagesSENL200306btopenworld.com To: SOLARECLIPSESSENL200306aula.com Date: Wed, 14 May 2003 07:54:54

Dear All, Anyone can help. Looking for a solar filter (not solarscreen or self-cut polymer) for 37 mm lens for Sony Hi8 cam. Sony has ND8 filters in their range. Does it work with using two ND8 filters> Thanks, PP

Fro m: Jay Friedland

Hi Patrick, Thousand Oaks Optical has them (the black polymer type) - here's the web link: http://www.thousandoaksoptical.com/solar.html Also I have had great luck recently using a Kenko 3x optical teleconverter on my Sony PC100 (which also has a 37mm thread). For the solar filter, I'm using an Orion 3.5" glass filter (which I believe is made by Thousand Oaks) fit snugly over a beer can insulator :-) which in turn fits over the Kenko. Hope that helps! - Jay

From: Klipsi

alternatively, if you have a 58mm filter , you could get a step up ring 37 to 46 , another stepup ring 46 to 55 and another 55 to 58. Klipsi

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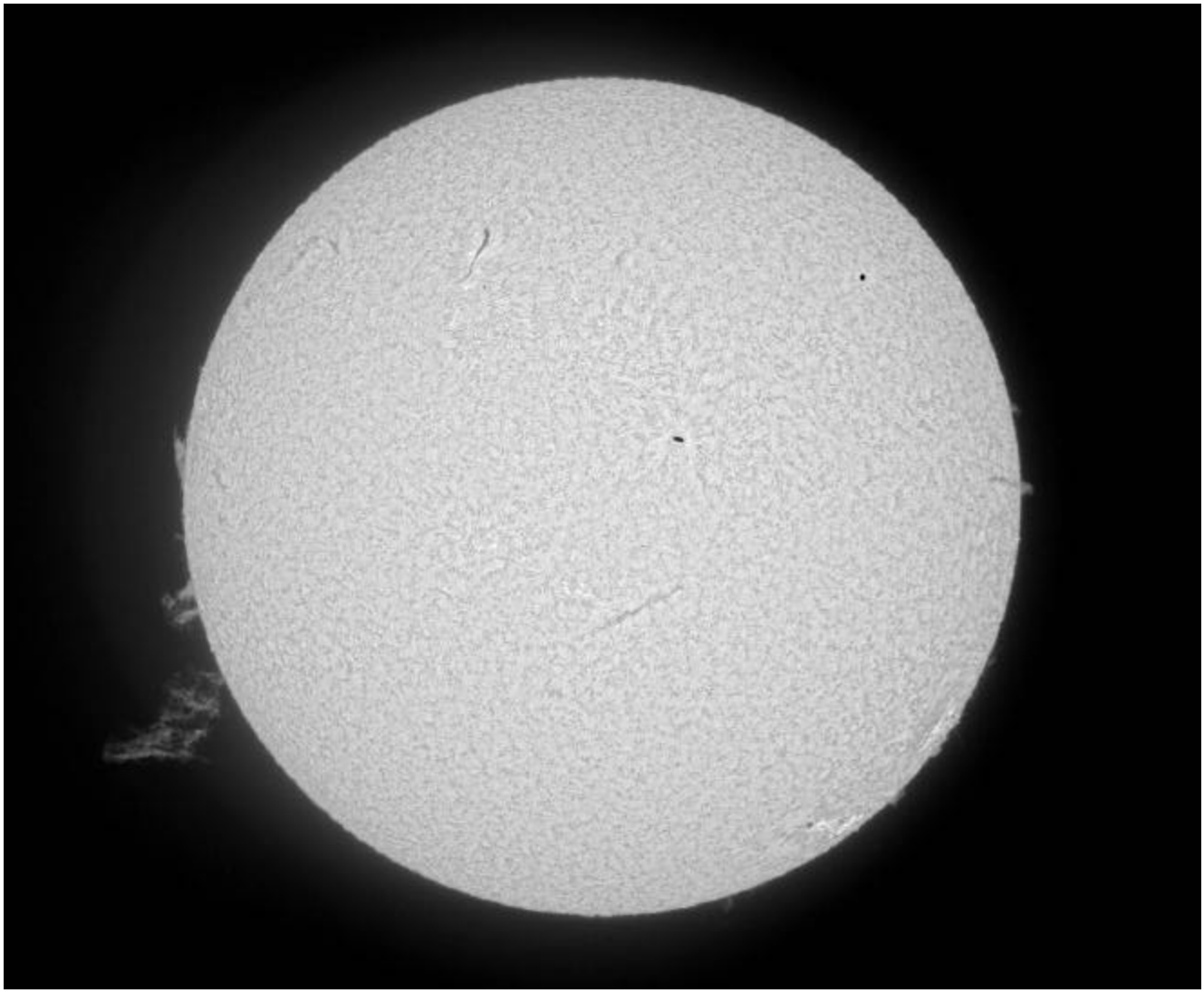
Mercury transit in Halpha

From: christian viladrich To: SE Mailing List <SOLARECLIPSESSENL200306AULA.COM> Date: Wed, 14 May 2003 21:18:59

Dear all, Please take a few moments to enjoy the wonderfull CCD Halpha images taken by Thierry Legault during the Mercury transit :

> http://perso.club-internet.fr/legault/mercury_transit_fr.html

Best regards Christian Viladrich http://perso.club-internet.fr/viladric/



transit in h alfa s20030507_0917UT_small

SETalk

Lunar eclipse from the Netherlands

From: Govert Schilling To: Solar Eclipse List <solareclipsesSENL200306aula.com> Date: Fri, 16 May 2003 04:45:55

The first half of the May 15/16 total lunar eclipse was visible from my hometown Utrecht in the Netherlands under clear (but increasingly brigthening) skies. Second contact occurred at 05.14, with the moon only a few degrees above the horizon and twilight already well on its way. About half an hour earlier, the reddish color of the eclipsed part of the moon was very faintly visible, even with the naked eye, but as twilight became stronger and the moon's altitude decreased, the color faded quickly. Around the time of 2nd contact, nothing was visible with the naked eye, and only a very, very faint 'fingernail' of orangeish moonlight could be seen with my 11x80 binoculars, at the part of the moon that was closest to the edge of the Earth's shadow. Only minutes later, the moon disappeared behind trees and houses. Back at my computer, I found that no single webcast seemed to work properly, hopefully ;) because of huge attendance... --Govert http://www.govertschilling.nl

Clouded Out (Yes, Again) & Frustrated

From: AlcovedbaseSENL200306aol.com To: SOLARECLIPSESSENL200306aula.com Date: Fri, 16 May 2003 04:52:39

Hi All, As I type this message, I am still checking the sky to see whether there is a slight hope to see just one minute of the eclipsed Moon. Unfortunately, not a chance here, in New England! This is the second time that the weather let me down after last week's missed Mercury transit. I hit the jackpot, two times within 8 days! Luckily, the local CBS channel broadcast live pictures of the eclipse from Miami. That was a consolation.

BTW, if you live in southern California, New Mexico or Arizona, and you are looking for an international investment banker, please let me know. I'll send you my resume asap. I promise to work seven days a week, just let me observe anything I can when it is clear (i.e., always)!

Happy lunar eclipse observing to anyone who can right now. Haldun I. Menali

From: Klipsi

dear friends, just a short message to confirm I was completely clouded out in the Texas panhandle, saw no Moon at all, no eclipse. But saw several tornadoes ... ;-) Klipsi

From: F.Podmore

You lucky people!! Yesterday the weather was very unseasonably overcast all day and we even had a little rain. When I got up at 3 am there was still lots of cloud but I could see the Full Moon easily. But by 4 am it was hopeless, I could hardly tell where the Moon was (:-(((

Hoping for better conditions on 9 November. Francis

From: solareclipsewebpagesSENL200306btopenworld.com

Clouded out from Derbyshire, UK. Rain, rain, rain ... PP

From: Hal Couzens

hi All, Likewise I am tired of being an amateur astronomy in London. Sigh, thick cloud.

clouded out for last 2 lunar eclipses here in england (way back in 2001?). and for the solar in south africa. makes it nearly 2 years since i last saw an eclipse (aside from mercury which i did see through my 10x50's)... Should i risk going for the annular in Scotland?

anyway last nights eclipse looked great in the dream i had after i went back to sleep at 5am though somehow Heineken had sponsored the event, shudder the thought. double sigh Hal Couzens

From: Francis Graham

Hi The attempt to do photometry at the Smith Hall Obs. at Case was utterly clouded out. Francis Graham

Vanishing moon

From: Gubbels Guido To: SOLARLIST <SOLARECLIPSESSENL200306AULA.COM> Date: Fri, 16 May

After a week of variable circumstances with thunderstorms the situation improved this morning. From my home I was capable of following the lunar-eclipse. It was a race between the moon being swallowed by Earth's shadow and the upcoming twilight. Eventually the twilight won the race. For my observing place totality started when the moon reached an altitude of about 5° above the southwestern horizon. For the unaided eye the moon was barley visible at totality and it was impossible to distinguish the eclipsed body at 3.17 UT. With the 7x50 binocular I could follow the moon until 3.20 UT. At this point the eclipsed moon was lost in the grey-bleu

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twilight. In comparison with other lunar eclipses I've watched before my guess for the Danjon-value would be about 1.2 (made with binocular just before totality). But this value is very unreliable because of the interfering twilight. It was awesome to see

Inconstant Moon from Tucson

From: Glenn Schneider To: SOLARECLIPSESSENL200306AULA.COM ate: Fri, 16 May 2003 14:41:46

Beautiful view of the TLE03 from the visible "start" to end, from behind my house here in Tucson. Moonrise was at 7:06 MST, but as expected not seen due to the optical depth of the Rincon Mountains to the East. However, at 7:25 MST the partially eclipse moon rose with the "top" uneclipsed (well, in the penumbra) over the flattish peak of the mountains. A wonderful sight as twilight was rapidly darkening. We watched it rise between columns of some nearby tall cacti. As noted by others totality was "rather dark", bit the brightness and pastel dull yellow to deep orange color gradient across the moon was very strong. Mid-eclipse here occured with the moon only 16 degrees above the horizon, which made for a rather esthetically pleasing view.

Enough ape-teaser, time to start preparing for TSE03 Glenn Schneider

Lunar Eclipse flight from Texas to UK

From: McCann, Stephen To: '"SOLARECLIPSESSENL200306AULA.COM"' <SOLARECLIPSESSENL200306AULA.COM> Date: Fri, 16 May 2003 14:55:15

Message Klipsi, Sorry to make you jealous, but I've just returned from Dallas, Texas on the overnight British Airways flight to Gatwick and I watched a beautiful eclipse from my window seat, from the beginning to about 10 minutes before the end of the partial phase, fighting against the on rush of a very quick dawn.

The dynamics of the moons passage across my window were rather odd, rising sharply in the South - East, only to sink suddenly again towards the South, as the flight travelled North - East across the US and Canada.

At 37,000 ft (11,200m), the seeing was clear, and I also believe that mid-eclipse was quite dark, being a deep orange copper colour. I also noted the penumbral phase about 45 minutes before the partial phase started, as a distinct grey cast on a brilliant white moon. At mid eclipse, we were some 700 miles south of Greenland in mid-Atlantic.

By the way, this trip was just a co-incidental business trip, not pre-arranged.

See you in Shetland for the next event in 2 weeks time. Kind regards Stephen

Total Lunar Eclipse - Preliminar images from Gran Canaria (Canary Islands)

From: Francisco A. Rodriguez Ramirez To: SOLARECLIPSESSENL200306AULA.COM Date: Fri, 16 May 2003 20:32:30

Hi all, You can see the preliminar images from Gran Canaria http://live.saros.org

Best Regards Francisco A. Rodriguez Ramirez www.astroeduca.com www.saros.org

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Seattle Lunar Eclipse Photo

From: Dale Ireland To: "Solar Eclipse List (solar eclipse list)" <SOLARECLIPSESSENL200306aula.com> "APML (APML)" <astro-photoSENL200306seds.org> Date: Sat, 17 May 2003 03:14:07

We were clouded out in Seattle. A few brief moments near the end of the partial phase were seen through holes in the clouds. Unseasonably cold weather even for Seattle, snow in the mountains. This image was taken with a handheld Olympus 2020 on auto from 15mi NW of Seattle across Puget sound showing the city and the Moon's reflection on the sound.

http://www.drdale.com/eclipses/images/53.jpg Dale

Another transit?

From: Richard Monk To: SOLARECLIPSESSENL200306AULA.COM Date: Sat, 17 May 2003 12:51:51

I must compliment some of those wonderful transit photos posted last week, especially the one by Philippe Jacquot. Apart from first thing in the morning when there was significant clouding, transit weather in Cambridge UK was ideal. However my photography and videoing of the event were not as successful as other peoples. For some reason I did not manage to collect any photographic images on three films taken through my Celestron even though I could spot Mercury through the camera's viewfinder. Puzzling! I did manage to record a "blob" traversing the sun with my camcorder - again it was problem of setting the correct shutter speed and aperture combination. There is probably enough stuff for a one or two minute movie which I will post on my web site in due course.

In the meantime I have posted three captured images on my web site which might amuse. Follow the Mercury Transit link in http://homepage.ntlworld.com/rimonk/index.htm

The lunar eclipse as seen from Cambridge, was a non-event - so it is 2-0 to astronomy (a soccer reference!)

The weather prospects for northern Iceland on 31st May don't look too promising, so it may well be 3-0 - let's hope not. They tell me that the beer over there is very expensive, so consolation may not be cheap. Clear skies for all. Richard MONK

1874 transit of Venus by Janssen

From: ccmarlot To: SOLARECLIPSESSENL200306AULA.COM Date: Sat, 17 May 2003 07:33:34

Dear friends, I tought this could be interesting, at least amazing ... You can see an animation of the first and second contacts made from separate images taken by Jules Janssen with his "photographic revolver" in Japan in 1874. http://web.inter.nl.net/users/anima/chronoph/janssen/index.htm Specially, you can see a very faint atmospheric halo around the planet, on most of the individual images. Or could it be a problem with contrast between the bright solar disk and the dark spot of the planet ? About this effect, the problem remains almost the same after 121 years. As you can see a similar effect around the solar disk itself, I think the aureol round Venus is an artefact ... Christophe

From: Glenn Schneider

Hi all, Glenn : > I have made that figure available on my server: http://nicmosis.as.arizona.edu:8000/PREPRINTS/ICARUS_FIG3.jpg

Thanks for this link ; this historical images are so incredible ! But none of them are free from artefacts and aberrations, so it is very difficult to decide about the reality of the bright halo around Venus on the photos. In fact, this effect can also be seen on the plates taken by the french 1874 missions in Nagasaki, Pekin or Noumea with the photoheliograph designed by Fizeau (135 mm diameter, 3.8 m focal lengh). This plates are daguerreotype. It should be interesting to compare them with US or english collodion plates taken the same day. Also, the english expeditions had some Janssen photographic revolver gear, but they used some wet collodion plates in place of the french daguerreotype plates. Any link showing this collodion plates ? The US plates

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taken in 1882 : http://www.venus-transit.de/1882/plates/index.html didn't show any luminous halo.

More recently, there is a curious dark halo round Mercury during the last transit : http://www.solarphysics.kva.se/Mercurytransit7May2003/index.html which is probably due to atmospheric turbulence. Sincerely, Christophe

Christophe, These are indeed fascinating images and bespeak of the ingenuity of Janssen, who was of course, also one of the great solar pioneers. By coincidence, I had reproduced them in a paper with Jay Pasachoff and Leon Goulb which we recently submitted for publication in ICARUS. I think you might get a better appreciation for the individual frames as we have reprocessed them (as opposed to the animation - though the site you point to is quite marvelous and I suspect anyone on SEML would appreciate it) in light of the question you raise here. I have made that figure available on my server: http://nicmosis.as.arizona.edu:8000/PREPRINTS/ICARUS_FIG3.jpg

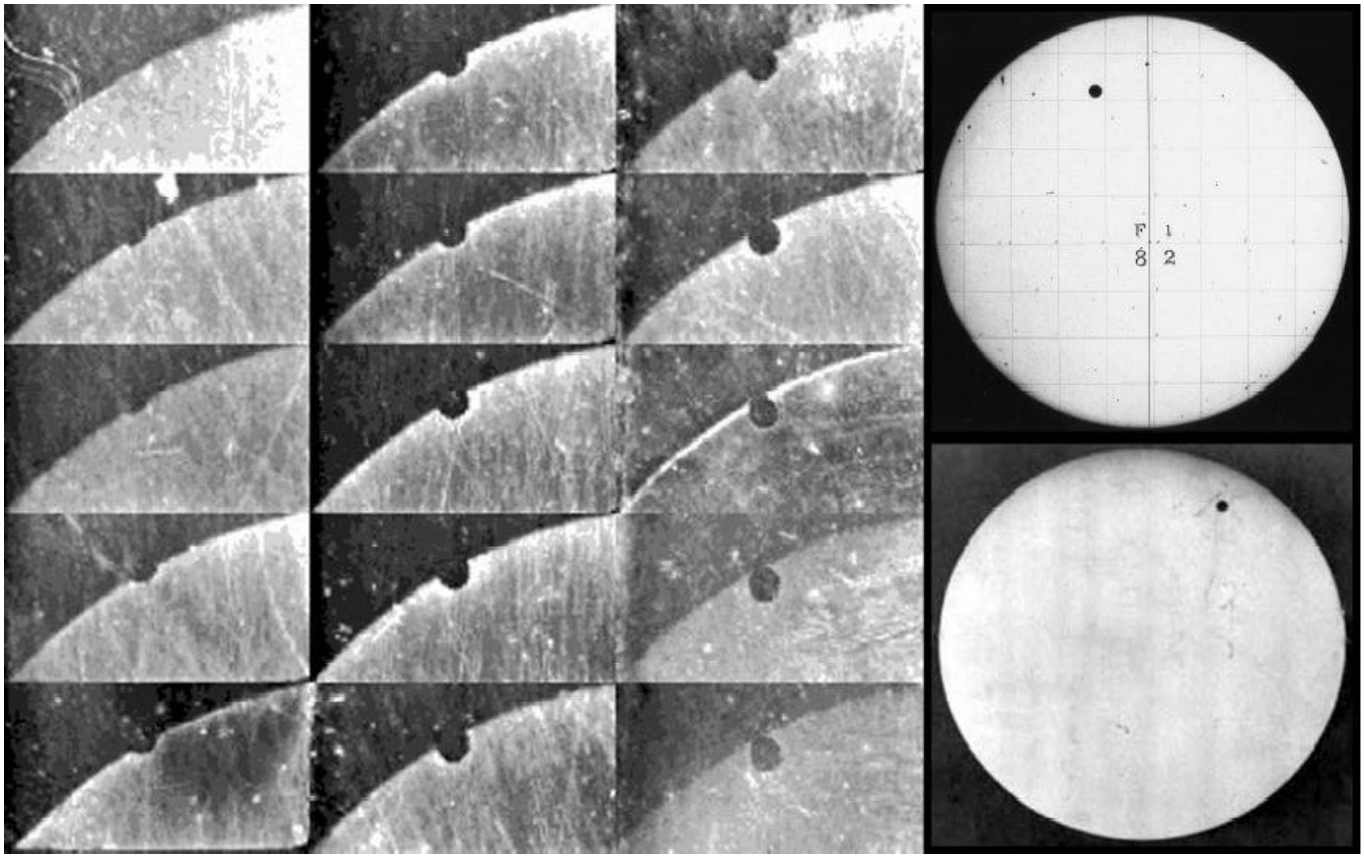
FYI - That figure caption (in its current pre-print form) reads:

Figure 3. Photographic images of the 19th century transits of Venus. Left: Daguerreotypic time-resolved ingress sequence of the 1874 transit by Janssen (1875) using his "photographic revolver"11 (Janssen 1873, Anon. 1875, Janssen 1876). Right: The 1882 transit; one of eleven surviving images taken by the United States Naval Observatory (top, courtesy of USNO); photograph by Maria Mitchell and her students at Vassar College (bottom, reprinted with permission from Archives and Special Collections, Vassar College Libraries).

and the relevant references are: Anon. 1875. Sectional Proceedings, Section A ? Mathematics and Physics. Nature, 12, 405.

Janssen, P. C. J. 1873. Passage de Vénus: method pour obtenir photographiquement l'instant des contacts avec les circonstances physiques gu'il présentent. Comptes Rendus de Séances de l'Academie de Sciences, 76, 677.

Janssen, P. C. J. 1876. Présentation du revolver photographque et épreuves obtenues avec cet instrument. Bulletin de la Société



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Francaise de Photographie, 22.

FYI - Even more recently Jay and I have made an inquiry to l'Observatoire de Paris in an effort locate and see if we might be able to (at a future date) work with the original daguerrotypes. Cheers, Glenn Schneider

Another Mercurian + Avionic Transit image

From: Glenn Schneider To: SOLARECLIPSESSENL200306AULA.COM Date: Thu, 15 May 2003 22:01:48

http://www.astronomy.com/photogallery/gallery_large.asp?idObjectLibraryGUID=%7B98D4FB91-9603-4D11-90EC-649F09E0B4BB%7D

Still haven't seen the reported ISS + Mercury transit image. If anyone know's the actual URL for that, it would be appreciated. Cheers, -GS-

From: Gerard M Foley

Movie(s?) are supposed to be linked from

http://216.239.37.104/searchq=cache:8xmgke5IwxMC:www.spaceweather.com/+ISS+Mercury+Transit&hl=en&ie=U-8

If this wraps so it doesn't work, I got to it from

http://science.nasa.gov/ppod/archive.html

I got what I take to be images of Mercury here:

http://science.nasa.gov/spaceweather/swpod2003/09may03/isstransit.mov

but I didn't manage to discern the ISS. The text with the link describes the image as "ghostly", so maybe I just don't have the discrimination (or faith?) to pick it up. When I clicked on the other link, to the 600KB AVI file, I was told that some feature of QuickTime was unavailable. Good Luck Gerry

From: dietmar.stapsSENL200306wiesbaden.netsurf.de

<smaller>Hello please try the links in the video section of http://student.physik.uni-mainz.de/~astro/aktuell/2003/merkur/Welcome.html greetings dietmar staps

another mercury avionic transit MerkurTransitFlugzeugHansSchrem-mer_800x800_WWW

SETalk

Akhet stands for "solar eclipse" ?

From: Harvey Wasserman To: SOLARECLIPSESSENL200306AULA.COM Date: Mon, 19 May 2003 17:02:40

On Bill Kramer's site, there is an article by Aymen Ibrahem that proposes that the Egyptian hieroglyph, "Akhet" does not stand for "Horizon", but rather "solar eclipse" and goes on to some rather interesting conclusions, it seems. Is Bill a member of this list? I have never seen reference to this, so please forgive me if this is already known to all.

http://www.eclipse-chasers.com/akhet.html Harvey Wasserman

Space Station Lunar Eclipse (fwd)

From: F.Podmore To: Solar Eclipses Mailing List <solareclipsesSENL200306aula.com> Date: Tue, 20 May 2003 08:06:03

For those of you not on the NASA emailing list, here's another TLE link. Francis

Forwarded message -- Date: Mon, 19 May 2003 12:12:02 -0500 From: NASA Science News <snglistSENL200306snglist.msfc.nasa.gov> To: NASA Science News <snglistSENL200306snglist.msfc.nasa.gov> Subject: Space Station Lunar Eclipse

Space Station Science Picture of the Day for May 19, 2003

Lots of people on Earth took pictures of last week's total lunar eclipse. Only one did it from Earth orbit: ISS science officer Ed Lu.

PICTURE AND INFO at

http://science.nasa.gov/ppod/y2003/19may_lunareclipse.htm?list522896

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Home page: http://science.nasa.gov

SETalk

Transit & lunar eclipse

From: b b To: SOLARECLIPSESSENL200306AULA.COM Date: Mon, 19 May 2003 10:45:12

Hello all, The transit of Mercury was a beautiful sight here in Petegem a/d Leie (BELGIUM). I was able to see it all time. Only when the planet was half the way of the transit was there a cloud layer that blocked some of the view but not completely.

During the lunar eclipse I was not able to watch it because I had to work in a plant in Gent. One of my collegas was able to see the moon about a quarter after the beginning of the eclipse and he told me that he clearly saw the shadow over the moon coming.

When I was able to get outside to watch it about half an hour before the totality center I could see the moon no longer. Was it due to clouds near the horizon or was it because the eclipse was so dark, I don't know.

The solar eclipse in Schotland will not be observed by us this year because my wife has to undergo a medical operation. Rita & Valentin KINET

Lunar eclipse from Long Island, NY

From: DribalzSENL200306aol.com To: SOLARECLIPSESSENL200306aula.com Date: Fri, 16 May 2003 05:13:29

Clouded out :(

From: Marc Weihrauch

Dear friends, surprisingly the second of the three May-events was visible from my place , too. After successfully observing the transit of Mercury I watched the lunar eclipse from the very same spot, from the tower at the department of Physics at the Martin-Luther-University Halle-Wittenberg (http://www.physik.uni-halle.de). It was the first time for me that I consciously saw the penumbral eclipse. The beginning of the partial phase was well visible, the red colour of the umbra early detectable. However, the rapidly brightening skies soon made the moon fade. It disappeared completely from our view before second contact. A few minutes before U2 the moon was visible neither with telescope or binoculars nor with the naked eye. A bit envious we thought of the Americans who surely had a better view, weather permitting.

By the way, now it's cloudy outside, as well as it was cloudy yesterday.

(This is highly solar-eclipse-related as today's event can be considered as prelude to May 31st...) Best regards Marc

From: Ted Saker, Jr.

We saw it all! The skies cleared up after a nasty T-storm.... pretty incredible. I thought the moon was dark grey at midpoint and almost invisible. I'd give it a 0.5 on the Danjon scale even though it skimned pretty close to the northern edge of the umbra.

From: Peter Tiedt

Absolutely beautiful deep copper coloured, fading to golden in the partial phases. Crystal clear skies.

From: Klipsi

a friend of mine reports clear skies and great eclipse, from Easter Island in the South Pacific Ocean. Klipsi

From: Egan Mark

Okay... I'm glad you noted that. I viewed the eclipse from 20 miles south of Houston. I thought the eclipse was rather dark, too.... but I wondered if it was due to the conditions. We had light to moderately thick clouds, constantly thick haze, and hazy smoke due

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to wildfires in Mexico and Central America. Certainly the darkest TLE I've seen (out of 4), plus a 93% partial (3/23/97). But those other ones were clear-- so it makes me wonder whether the apparent darkness of this one was due to the conditions.

I also had difficulty describing the color of this one (brownish with a very slight red tint?????) I saw another eclipse (Nov. 1993) that produced similarly strange colors. Oddly enough, the moon passed close to the edge of the earth's shadow at that eclipse. (But this eclipse lacked the very bright rim that remained at that one)

It was certainly an odd eclipse-- it seemed especially 3-D tonight.

Can't wait for the other reports to come in-- can't wait for November's TLE- and best wishes to all travelling for the ASE in 2 weeks. Mark from Houston!!!!

From: Egan Mark

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and best wishes to all travelling for the ASE in 2 weeks. Mark from Houston!!!!

From: Dave Schmahl

Hello to all, I observed the TLE from Mt. Palomar, north of San Diego, California under clear skies. The Moon rose in deep partial eclipse at 7:38 PM with the sky still a twilight blue. Astronomical twilight still had not ended at second contact around 8:10. At mid eclipse, the Moon appeared to vary from a light orange to a dark brown in color. Between third and fourth contacts, I thought it was interesting to watch the edge of the Earth's shadow progress across the Moon until it left the Moon's limb at 10:15PM. At previous penumbral eclipses, I never bothered to look carefully at the Moon, but this time, as the Moon passed through the penumbra I did watch, and was able to see some definite darkening of the otherwise very bright Full Moon.

I exposed several rolls of film, and if any turn out well, they will be posted on my website, www.astrostop.com. I have to admit that I was at a loss as to what exposure and film speed to use during the rising/twilight phase. Instead of guessing at what might be the best exposure, and probably guessing wrong, I decided to cover the possibilities by exposing at every shutter speed my camera could handle using 400 speed film, on a motor guided mount, with two camera bodies, one with a 1000mm and the other a 200mm lens. I am used to photographing solar eclipses and comets, so this is unknown territory but a great learning experience. Dave Schmahl Vista, CA.

From: Alejandra León-Castellá

Dear all, We did see most of it, from the southernmost tip of the Nicoyan Peninsula in the Pacific Coast. It was an incredible night. When we took the catamaran to cross the Nicoyan Gulf early in the evening, the skies were absolutely clouded. It looked dreadful. But the weather cleared up and we were able to see most phases.

I expected to a darker moon in totality. So I will be interested in more comments on the strange color. More later, I am just exhausted from this long trip. But happy!! Alejandra León-Castellá Fundación CIENTEC Costa Rica

(Continued on page 44)

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From: Jay.M.PasachoffSENL200306williams.edu

>From Williamstown, Massachusetts (200 km west of Boston and 250 km north of New York), we saw just about the whole set of partial phases up until a few minutes before totality, looking through haze and holes in clouds. The partially eclipsed lunar surface looked dark, with little color. Thick clouds covered the Moon entirely starting just before totality and never cleared. Jay Pasachoff

From: John Leppert

Friends, Although the moon rose at the start of the umbral phase (21:02 local CDT) --- just a few minutes prior to local sunset (21:11) --- it did so in clear skies. The only bit worth complaining about were the strengthening southeast winds well above 10 mph which made the evening's 50-degree temperature seem cool. I was joined at the observatory some 50 miles northeast of the state capital by several friends: a local farmer and his family who had left off sowing corn to see the eclipse, and an entomologist colleague who drove from Bismarck. The lunar landscape appeared a bit darker and the red-orange hues quite subtle from the many other eclipses seen during nearly four decades. By midnight the last of the umbral shadow neared (00:17), while the greening prairie was again awash in the full lunar light. We took advantage of the darkness during totality for views of Jupiter --- unfortunately Saturn was below the limit of the observatory's west wall --- and several galaxies, namely M81, M82, and M51. All in all, it was a lovely evening. John Leppert Deneb Observatory

From: Nicki Mennekens

Hi everyone, The lunar eclipse was perfectly visible from Vilvoorde, Belgium, as there were no clouds at all. However, totality was extremely dark, the moon was absolutely invisible. But hey, so what, this makes a 2 out of 2. If skies are clear on May 31 for the grand final, you won't hear me complaining... Grtz, Nicki

Pictures from Belgium at the sites linked at my homepage: http://members.lycos.nl/mennekens/eclips/engels/live_en.html.

From: Daniel Fischer

Here in (Western) Germany the TLE had rather unusual (at least for me :-) geometrical circumstances: Mid-totality coincided with sunrise to within a few minutes. This meant that the Moon was always as many degrees above the horizon as the Sun was below, and initially I didn't have much hope for a fine show.

Boy, was I wrong! Firstly, the skies were extremely clear once more (as with the Transit of Mercury = two hits in one month - I think that's almost unheard of in German astronomical history) - and secondly, they were still pretty dark during the first half of the first partiality. Just a few minutes after it began, I could already see that the umbra wouldn't be too dark. About halfway through partiality, the lunar surface in the umbra was very evident, and while not much color was visible in binoculars, a video camera in long-exposure mode showed a strong reddish color.

With partiality progressing, the Moon sinking lower and the sky getting brighter all the time, the impressiveness of the umbral part faded, and eventually the part of the Moon closest to the center of the umbra disappeared. Then the whole Moon (i.e. also the part still in the penumbra) got pretty yellow as extinction at 5 degrees elevations became quite evident. Unfortunately the Moon was lost from view due to a distant mountain a few minutes before totality started, but - according to other reports - it merely disappeared at that point, even in telescopes.

In a nutshell, it was a splendid show - and as the Transit of Mercury it was far more impressive than I had anticipated. Daniel Fischer Koenigswinter-Heisterbacherrott Germany

From: Crocker, Tony (FSA)

The L.A. Astronomical Society set up their telescopes on the lawn next to the Gene Autry Western Museum, as their usual site at Griffith Observatory is a construction zone from last October to the end of 2005. Observing conditions were the mirror image of most of the European descriptions.

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In general seeing conditions were mediocre despite total lack of clouds. Twilight lasted to beyond second contact, there was a lot of haze at low angles above the horizon, and the moon was rising over the L.A. metro area with a tremendous amount of light pollution. There were also trees and power lines in the direction of moonrise.

The moon was first visible shortly before 8:00PM PDT as a faint yellowish fingernail just above the power lines. When totality began at 8:15 some brownish definition of the moon could be seen at the upper left corner near the umbra edge. Through the haze/twilight most of the moon was invisible at this point. The rest of the moon gradually became visible as it rose higher and the sky became darker. However, through my 10x50 binoculars and the scopes on the lawn the color remained brown and would rate 1.0 on the Danjon scale in my opinion.

Third contact was the most aesthetically pleasing view, and some observers thought it looked like a diamond ring. By this time the full circumference of the moon was finally visible. Most of us assumed that our Danjon estimates would be inaccurate due to the twilight/haze/light issues. As I was leaving I saw a TV monitor where the part of the moon still in the umbra did have an orange tinge.

From: Glenn Schneider

"Crocker, Tony (FSA)" wrote: Third contact was the most aesthetically pleasing view, and some observers thought it looked like a diamond ring.

This is interesting. I had the same (subjective) reaction, as did my neighbor (who is not an experience observer, but was VERY much was enthused by this eclipse). I.e., the "diamond-ring" like appearance for the minute or so following C III (but not so just prior to CII). This was very much more pronounced, in that very rough analogy, than past TLEs I can remember. Perhaps it was the combination of the sky conditions (completely clear, no haze, but moderately low altitude; 30 degrees [2 air masses] for us at third contact), combined with the contrast and coloration of the umbral shadow on the Moon. Maybe that was enhanced by the position angle of contact and the relative albedos on the lunar surface in the then penumbral and umbral regions? I don't think I ever have previously alluded to anything like a diamond-ringish phenomenon for a lunar eclipse - but would not hesitate to do so for this one. This should not be taken as too literally as a parallel description for a TSE's diamond ring - but viewing CIII last night, it really did seem to fit. In any event, it was visually quite stunning, and I am afraid that the subtitles of the image contrast registered by the brain will very likely be lost in photographs. I hope others may prove me wrong about that, as for once, I didn't engage in any comprehensive photographic program (too much fun just watching with my 9 year old daughter and friends). This was of some compensation, for me, for being in the wrong part of the world for the recent Mercury transit, as I will again be incorrectly located for the ASE to come. Good luck (and clear skies) to all who will find themselves in the path for that one. Glenn Schneider

From: Brian Garrett

Greetings all, The weather in south Orange County (California) had finally become cooperative by sunset after having been anywhere from partly cloudy to overcast for the last several days. Moonrise was to take place at 19:37 local time (02:37 UT), simultaneous almost to the second with sunset. With the hilly terrain near my location (Mission Viejo 33° 37' N 117° 40' W), I knew not to expect to see the moon until it was at least 3 to 3.5 degrees above the horizon, which it would attain about 19:55. Had the moon not been in deep partial eclipse at the time its location would have been easy to spot but due to the twilight and the moon's reduced brightness I did not spot it until 20:17. The "thumbnail" effect, as people have been calling it, was very pronounced, was medium-pink in color and produced a beautiful highlight to the deepening twilight in the southeastern sky.

I was at work that evening but continued to take glances during totality. By 20:40 the moon had taken on a brownish cast, with the northward (left-facing) part of the disk brighter than the central and southward portions. The deepest part of the umbra was clearly visible as a very dark "blob" occupying pretty much the entire right side of the lunar disk. By 21:00 (03:00 UT) the portion of the moon nearest to exiting the earth's shadow was brighter than it had been 15 minutes earlier, and instead of a thumbnail it was a thick arc occupying the portion of the disk between 7 o'clock and 12 o'clock along the limb and extending about a third of the way toward the center. At 21:08 (one minute past the end of totality) I noticed the clear difference between the still-shaded area of the moon and the part that had just emerged from the umbra; it almost looked like what would be the diamond ring in a TSE. I continued to observe at five to ten minute intervals and was surprised at the quickness with which the moon was emerging. It seemed like

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the progress of the partial phases of previous lunar eclipses had not been so speedy--perhaps due to the moon being very near perigee this time around?

When the opportunity to take a look while at work presented itself I would continue to take glances as the moon emerged from the umbra, comparing the appearance to the predicted appearance on the program I had on the computer (Reinier Ott's Astronomic Clock www.dutch.nl/rcott/astronom.htm). I was still amazed that the partial phases were moving as quickly as they were even though I knew it was happening exactly as predicted. I took my last glance at 22:17, the precise end of the umbral phase. The last receding edge of the umbra was still barely visible but there seemed far less penumbral shading than usual. The degree of penumbral shading did become obvious later when before going to bed I saw the moon near its maximum elevation for the night and now completely free of the penumbra, and the difference in brightness between that moment and the end of the umbral phase was obvious.

All-in-all a delightful eclipse, not the darkest I've seen but not the brightest either. I don't know the Danjon scale well enough to give it a rating but it seemed to me about average in darkness for a TLE. Good luck and clear skies for 5/31, Brian Garrett

From: Jörg Schoppmeyer

I watched the lunar eclipse under almost perfect conditions from Fuerteventura. The whole show was visible from 1. to last contact under dark clear skies. During the total part, the moon was easily visible with the naked eye and through my ETX-70 it was a really wonderfull view.

This was my third lunar eclipse after 08/89 and 06/92(PLE) which I observed from this island and my 17.th TLE Joerg Schoppmeyer Germany

Node passage

From: Rybrks1SENL200306cs.com To: SOLARECLIPSESSENL200306aula.com Date: Tue, 20 May 2003 01:06:19

Earth passes through the line of the Moon's nodes May 21, 2003 at 01:20 UTC which is the evening of May 20 in the USA and early morning of May 21 Europe/Asia.

EclComp indicates May 22 (no hour) but my calculation is per above.

The Moon's ascending node lies between Earth and the Sun at present. Since the annular eclipse of May 31 is ten days later with the Sun having moved ten degrees to our left, the eclipse occurs with a positive gamma (Iceland & Scotland) Clear skies to all. Raymond Brooks

From: Glenn Schneider

Rybrks1SENL200306cs.com wrote: the Sun having moved ten degrees to our left

To "our left"? Is that a northern or southern hemisphere observer's "left" ;-) -GS-

From: Rybrks1SENL200306cs.com

Keenly aware the phrase risked a chauvinism charge, I launched it. Not because maps conventionally show north up.... (in Australia I found a map with south up and a mirror image clock in a restaurant running counter-clockwise...I loved it. Of course, the Aussie sundial actually does trace CCW!)

It *is* fair to say "to our left" because we have subjectively labelled the node for the May 31 ASE as ascending. Ascending for anyone is from feet towards head, so, the Moon and Sun move to our left. double :) and a :0)

Sorry, Fraser, I know this eclipse will seem "descending" to you but downunder will see none of it anyway. Clear horizons to the

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crazy folks (like myself) flying to the top of the globe (more chauvinism) to Iceland and other cloudy locales to see this. Nothing ventured, nothing gained. Cheers Ray Brooks

From: Glenn Schneider

Didn't mean to accuse you of hemispheric chauvinism - was just pulling your leg (or maybe your arm - depends upon which way is "up"). It IS true that "ascending" and "descending" orbit nodes are terms which ARE "oriented" for Northern hemisphere chauvinists. But, what can you say? Ecliptic and Equatorial coordinates have a parity hard-wired into them which are historically accountable to the fact that astronomers, being engaged in arguably the world's second oldest profession*, first populating the northern hemisphere. (*The world's oldest profession, of course, has historical parallelism due to its association with "the red light district" - something astronomer's of today still embrace in the quest for dark skies.) If anyone here can find a hemispherically politically correct, and parity independent, term to replace "ascending" and "descending" I would be amused to hear it - but I won't hold my breath for any serious consideration of adoption.

Cheers and clear skies at the "top of the globe". Glenn Schneider

From: Wil Carton

Sir, May I criticize your first sentence? It is the SUN that passes through the line of the Moon's nodes, which circumstance determines an eclipse season. Not the EARTH. The Earth is allways lined up between the ascending node and descending node of the moon's orbit. Wil Carton.

The Victorian Space Program-19th century eclipse expeditions

From: Jay Friedland To: "SOLARECLIPSESSENL200306AULA.COM" <SOLARECLIPSESSENL200306aula.com> Date: Wed, 21 May 2003 04:03:50

Hi All, There is a great article in the Spring 2003 issue of "The Bent" (the Tau Beta Pi Engineering Society magazine) entitled "The Victorian Space Program" by Tracy Bell about 19th century eclipse expeditions and how much effort scientists went to in planning and executing some of those expeditions - it is rather humbling but does remind me of some of the crazy things we have done... think special equipment :-) I especially like this quote:

"Although every expedition had its complement of tripod-mounted telescopes and meteorological stations, the expedition's centerpiece was usually some mammoth custom-built apparatus"

http://www.tbp.org/pages/publications/BENTFeatures/BellSp03.pdf

Enjoy and clear skies for everyone heading to ASE2003!

- Jay Likes Shadows...
Totals: 1991 Baja, 1994 Bolivia, 1995 Thailand, 1998 Galapagos, 1999
Austria, 2002 Australia
Annulars: 1992 Catalina Island (clouded out), 1994 Erie, PA,
2002 Puerto Vallarta (mostly clouded ;-)

From: Glenn Schneider

Jay Friedland wrote: http://www.tbp.org/pages/publications/BENTFeatures/BellSp 03.pdf

Just read the article, thanks. Seems, as someone has already said, the more things change the more they stay the same. Although I certainly would take exception to the statement: "... a crowd now surprisingly forgotten: solar astronomers". Certainly, they are not forgotten by the readers of this forum, and kept alive and informed to those new to the field in part by SENL. We all stand on the shoulders of giants. I just hope we don't fall off.

SETalk

Nit-Picks: I wonder where the mis-information about "the path of totality is always less than 170 miles wide" came from? I guess T. Bell isn't headed for Antarctica (and indeed that path is not one which is "swept from west to east") for the next one. "*good* total eclipses of the sun - defined as ones with more than a minute of totality". Harumph.

Otherwise, though, a thoroughly enjoyable and informative read. Don't miss it. Thanks for the pointer to it. -GS- Glenn Schneider

From: Glenn Schneider

For those who have read the article Jay Friedland's referred to and who want to know more about one of the great eclipse chasers of the late 19th & early 20th centuries, David Peck Todd (builder of the "pneumatic commutator", the "great great great great great grandmother of Umbraphile" as Jay Freidland had recently put it),

Here is a high resolution image of the Todd's "pneumatic commutator and battery of instruments" used to observe and photograph the 1889 TSE: http://mmd.foxtail.com/Pictures/solartelescope.html

And a bit more about it: http://mmd.foxtail.com/Pictures/solartelescope.html

What was not said, however, is that despite this great effort, Todd was clouded out! Here is a short recount in his own words from the Monthly Notices of the Royal Astronomical Society: http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1890MNRAS..50..380T&db_key=AST&high=3ecdd15f8410372

And, don't miss his paper "Automatic Photography of the Corona" in the May, 1897 Astrophysical Journal: http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1897ApJ.....5..318T&db_key=AST&high=3ecdd15f8410372

(Not that eclipse chasing isn't still "fun", surely it is, but THOSE were truly the glory days).

Here he is, to put a face to the well-known name: http://www.klima-luft.de/steinicke/ngcic/persons/todd.htm

Here is where he lived, with his also well-known wide: http://www.amherstcommon.com/ walking_tour/todd.html Cheers, Glenn Schneider http://nicmosis.as.arizona.edu:8000/

From: Jay.M.PasachoffSENL200306williams.edu

Readers of this list, who have recently been told about some articles about Victorian eclipse expeditions, should buy and read:

Alex Soojung-Kim Pang Empire and the Sun: Victorian Solar Eclipse Expeditions Stanford University Press, 2002 Jay Pasachoff

See a near mutual transit of Earth and Jupiter as seen from Mars

From: Jay.M.PasachoffSENL200306williams.edu To: solareclipsesSENL200306aula.com Date: Thu, 22 May 2003 18:03:45

THE FOLLOWING RELEASE WAS RECEIVED FROM NASA HEADQUARTERS, IN WASHINGTON, DC, AND IS FORWARDED FOR YOUR INFORMATION. (FORWARDING DOES NOT IMPLY ENDORSEMENT BY THE AMERICAN ASTRONOMICAL SOCIETY.)

Donald Savage Headquarters, Washington May 22, 2003 (Phone: 202/358-1547)

Paul Morledge Jet Propulsion Laboratory, Pasadena, Calif. (Phone: 818/354-0850)

RELEASE: 03-179 FIRST-TIME-EVER SNAPSHOT RELEASED OF MOTHER EARTH FROM MARS

Have you ever wondered what you would see if you were on Mars looking at the Earth through a small telescope? Now you can find out, thanks to a unique view of our world recently captured by NASA's Mars Global Surveyor (MGS) spacecraft currently orbiting the Red Planet.

SETalk

This first-ever image of its kind not only shows Mother Earth as a tiny alien world in the vast darkness of space, but also includes a view of the giant planet Jupiter and some of its larger moons. The camera aboard MGS photographed both planets in an alignment, as seen in the evening sky of Mars, at 9 a.m. EDT, May 8, 2003.

"From our Mars orbital-camera perspective, we've spent the last six-and-a-half years staring at Mars right in front of us," said Dr. Michael Malin, president and chief scientist of Malin Space Science Systems (MSSS), of San Diego, who operates the camera aboard MGS. "Taking this picture allowed us to look up from that work of exploring Mars and take in a more panoramic view. This image gives us a new perspective on that neighborhood, one in which we can see our own planet as one among many."

The image of Earth actually shows our home as a planetary disk, in a "half-Earth" phase. The image has been specially processed to allow both Earth and the much darker Moon to be visible together. The bright area at the top of the image of Earth is cloud cover over central and eastern North America. Below that, a darker area includes Central America and the Gulf of Mexico. The bright feature near the center-right of the crescent Earth consists of clouds over northern South America.

The image also shows the Earth-facing hemisphere of the Moon, since the Moon was on the far side of Earth as viewed from Mars. The slightly lighter tone of the lower portion of the image of the Moon results from the large and conspicuous ray system associated with the crater Tycho.

The image also shows Jupiter and three of the four Galilean satellites: Callisto, Ganymede, and Europa. At the time, Jupiter's giant red spot had rotated out of view, and, the other so-called Galilean satellite, Io, was behind Jupiter as seen from Mars. This image has been specially processed to show both Jupiter and its satellites, since Jupiter was much brighter than the three satellites.

Mars Global Surveyor, one of the most successful missions to Mars ever undertaken, has been orbiting the red planet since September 1997. The mission has examined the entire martian surface and provided a wealth of information, including some stunning high-resolution imagery, about the planet's atmosphere and interior.

Evaluation of landing sites for NASA's two Mars Exploration Rover missions and the British Beagle 2 lander mission has relied heavily on mineral mapping, detailed imagery and topographic measurements by MGS. NASA's Mars Exploration Rovers and the European Space Agency's Mars Express mission, which carries the Beagle 2 mission, are due to launch this summer and arrive at Mars starting late December 2003 through January 2004.

The Jet Propulsion Laboratory in Pasadena, Calif., manages Mars Global Surveyor for NASA's Office of Space Science in Washington. JPL is a division of the California Institute of Technology in Pasadena. JPL's industrial partner is Lockheed Martin Astronautics, Denver, which developed and operates the spacecraft. Malin Space Science Systems and the California Institute of Technology built the Mars Orbiter Camera, and MSSS operates the camera from its facilities in San Diego, Calif.

The image is available on the Internet at: http://www.msss.com/mars_images/moc/2003/05/22/ -end-

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IF YOU DO NOT WISH TO CONTINUE RECEIVING PRESS RELEASES THAT ARE FORWARDED TO THE NEWS MEDIA VIA THE AMERICAN ASTRONOMICAL SOCIETY, PLEASE REPLY ACCORDINGLY TO ANY INCOMING PRESS RELEASE, OR WRITE TO stephen.p.maranSENL200306nasa.gov. Requests for referrals to experts should be sent to the same address.

------- End of Forwarded Message

HDTV for the amateur

From: Jay.M.PasachoffSENL200306williams.edu To: solareclipsesSENL200306aula.com Date: Thu, 22 May 2003 23:15:30

Readers of this list will be interested in the new HDTV camera available for "only" $3500. Good thing there isn't another major total solar eclipse before the price has a chance to come down further, but I prophesy that many of us will be using cameras like this in 2005 and 2006. See http://www.nytimes.com/2003/05/22/technology/circuits/22stat.html Jay Pasachoff

SETalk

Strange structures on May-7-images in white light

From: Marc Weihrauch To: solareclipsesSENL200306aula.com Date: Fri, 23 May 2003 21:16:15

Dear friends, a member of our astronomical society has just shown us some images of the TOM of May 7. They were taken with a digital camera; he says the chip is especially sensitive in red light. Some images taken with very short exposures (1/1000 s) show structures that look uncannily like dark filaments - like prominences visible in front of the solar disk in H-alpha light.

Could you please take a look at the images under http://www.astroverein-halle.de/05070093.JPG (892 k) or http://www.astroverein-halle.de/05070092.JPG (222 k) and tell me what you think of them? They were taken around 8:07 UT; perhaps you can identify some of the structures on other images taken at that time... Do you believe these have to be artefacts, or could it be possible that the red-sensitive chip indeed captured some filaments in these underexposed photographs? Thank you in advance. Marc

From: Glenn Schneider

Marc, Without much to go on.... looks like artifacts to me.

To me they look like afocal images of dust which may lie on a CCD window, perhaps a few millimeters in front of the CCD itself causing "blurred" shadows on the focal plane. Since I don't know the optics feeding the camera, if there is a reimaged focal plane somewhere, there could be such contamination on an optical surface somewhere near it rather than just above the CCD focal plane itself.

Take a flat-field image (i.e., of a grey wall out of focus) at about the same exposure level and see if they are still seen.

Or, does (s)he have a series of images of the transit, and did the Sun move at all in the frames (i.e., imperfect tracking etc.)? If so see if these "features" remain fixed in location in the frames as the Sun moves.

Also, I don't know what you mean by "red sensitive", but H-alpha is 6563 Angstroms, which is not particularly too red as far as consumer grade CCDs go. Nearly all silicon CCDs suffer from fringing longward of about 9200 Angstroms and are completely "dead" by the time you get out to about 10,400 Ansgtroms. But virtually all non-science grade CCD cameras have no sensitivity that far into the near-IR, and this does not look like that (fringing) to me. Just my 2 cents. Glenn Schneider

TLE from Mt. Palomar

From: Dave Schmahl To: SOLARECLIPSESSENL200306AULA.COM Date: Sun, 25 May 2003 07:18:55

Hello All, Pix of the TLE on May 15 are now on www.astrostop.com. Please follow the links to Matt Artz and Dave Schmahl, 2003 Total Eclipse. As always, your comments are most welcome. Dave Schmahl Vista, CA.

----- Original Message - From: "Dave Schmahl" <dlschmahlSENL200306cox.net> Hello to all, I observed the TLE from Mt. Palomar, north of San Diego, California under clear skies. The Moon rose in deep partial eclipse at 7:38 PM with the sky still a twilight blue. Astronomical twilight still had not ended at second contact around 8:10. At mid eclipse, the Moon appeared to vary from a light orange to a dark brown in color. Between third and fourth contacts, I thought it was interesting to watch the edge of the Earth's shadow progress across the Moon until it left the Moon's limb at 10:15PM. At previous penumbral eclipses, I never bothered to look carefully at the Moon, but this time, as the Moon passed through the penumbra I did watch, and was able to see some definite darkening of the otherwise very bright Full Moon.

I exposed several rolls of film, and if any turn out well, they will be posted on my website, www.astrostop.com. I have to admit that I was at a loss as to what exposure and film speed to use during the rising/twilight phase. Instead of guessing at what might be the best exposure, and probably guessing wrong, I decided to cover the possibilities by exposing at every shutter speed my camera could handle using 400 speed film, on a motor guided mount, with two camera bodies, one with a 1000mm and the other a 200mm lens.

SETalk

I am used to photographing solar eclipses and comets, so this is unknown territory but a great learning experience. Dave Schmahl Vista, CA.

TSE of Sept 10, 1923

From: Dave Schmahl To: SOLARECLIPSESSENL200306AULA.COM Date: Sun, 25 May 2003 09:03:55

Hello All, I was talking to my 91 year old Uncle the other day about last week's TLE when he recalled a TSE that he saw when he was a boy that, "Everyone was taking about at the time." His recollection of the event was that, "It got dark and people used candles to smoke glass for watching the partial phases". He has lived his entire life in L.A., so I searched through WinEclipse and found a TSE on September 10, 1923 that grazes L.A. with the centerline cutting right over the Channel Islands. If I was alive then and living where I do now in Vista, in northern San Diego county, I could have seen 2 minutes and 40 seconds of totality from my own backyard!

Does anyone on this list know of any pictures taken of that eclipse? According to Starry Night Deluxe it was a very interesting sky with Venus very close to the Sun, with Mars, Saturn, and Mercury all nearby. My Uncle and I would both like to see what the corona looked like back then, and he would love to have a keepsake of the event. Dave Schmahl Vista, CA.

From: John Leppert

Dave, See the "Washington Observations (WO) and Publications of the U. S. Naval Observatory" link below.Once there, use your page down key, depressing it 22-23 times until you reach Volume XXVIII and 1924. The 1923 eclipse is listed there along with those of 1905 and 1918. Perhaps you might be able to contact the library there and find a photograph within their archives. BTW, I located this at GOOGLE by typing "Sept 10, 1923 eclipse." It was the first entry listed. http://www.usno.navy.mil/library/libsource/pub_obs2nd.html John Leppert Deneb Observatory

From: Dave Schmahl

Thanks, John. I'll try to contact them.

From: Chris Malicki

The Astronomy Journal "Popular Astronomy" Volume XXXI, No. 8 from October 1923 has a photograph of the total eclipse taken by Mr. James Worthington at Lompoc, California (plate XXX). The December 1923 issue of Popular Astronomy, Volume XXXI, No. 10 (Whole No. 310) also has a photograph of the solar corona, September 10, 1923 "taken by the Mexican National Observatory at Yerbanis, Mexico with the 19-meter camera. exposure 60 seconds." In the same issue there is a photograph of the solar corona taken by the University of Arizona expedition at Port Libertad, Mexico. There are several other photos of that eclipse in Pop Astronomy, including photos taken at Laguna Seca, Mexico. I have copies of these articles. A good university library should have originals of the Popular Astronomy magazines from the 1920's. Chris Malicki

From: Dave Schmahl

Chris, your help is greatly appreciated. You mentioned a 19-meter camera. Did you mean 1.9 meters?

I've asked the L.A. Times for any info they have. I'm hoping they don't tell me that it was clouded out in L.A.

From: Mike Simmons

>I've asked the L.A. Times for any info they have. I'm hoping they don't tell me that it was clouded out in L.A.

Mount Wilson Observatory mounted an expedition to San Pedro where they were clouded out. I don't know how far inland the clouds went, though. Mike Simmons

SETalk

From: Dave Schmahl

So, L.A. was clouded out. How disappointing that must have been. It explains why my uncle said only that, "It got dark".

I was in Virginia for the Annular/Total of 30 May,1984 where it was overcast and drizzling rain, but it got dark!

From: K. Wiersema

> So, L.A. was clouded out. How disappointing that must have been. It explains why my uncle said only that, "It got dark".

I personally feel that a clouded-out totality is still an amazing phenomenon, albeit very different from a TSE with clear weather. My first TSE had very very bad weather: it rained and the sky was totally overcast with dark-grey rainclouds. There was nowhere a patch of clear sky visible, and I was soaking wet because of the rain. Then came totality and it became very very dark. It could hardly see the people standing next to me. It was very impressing. The rain and the total darkness gave the whole thing a very special (almost magical) atmosphere. I still think it was one of the most beautiful experiences in my life, and I was not as disappointed as I thought I would be. It left me with a eclipse-addiction. I don't consider clouded-out eclipses "failures". I will also remember this eclipse when I'm 90 (though that's pretty far in the future). Cheers, Klaas

From: Chris Malicki

I have read reports of the eclipse of Sept. 10, 1923 in Popular Astronomy. The Yerkes expedition to Santa Catalina Island was clouded out. Edwin Frost, of the expedition writes: "The disappointing condition of the weather along the whole track south of us (even extending into Mexico) was a matter of very sincere regret to the citizens of California who take a certain pride in their climate." Joel Stebbins from the University of Wisconsin writes: "In common with other expeditions to the Pacific Coast, the one from the University of Wisconsin was disappointed in having a cloudy sky on September 10." The University of Mexico at Yerbanis, a small village half way between the city of Torreon and Durango, in the state of Durango, Mexico had torrential rain on the morning of the eclipse but clearing occured and "at the beginning of totality thin clouds were moving rapidly over the region of the eclipsed sun but the last half of totality occurred in a clear sky." At Yerbanis, the Sproul observatory expedition used four cameras of 65 ft., 104", 61" and 38" focal length. The Mexican National Observatory used a 6-meter camera and a 19-meter (NOT 1.9) camera focal length - not a typographical error. Chris Malicki http://webhome.idirect.com/~kmalicki

From: Crocker, Tony (FSA)

After returning from my first TSE in 1999, I browsed some old newspaper microfiches at the Pasadena Library. Due to location 1923 was one which interested me most. Totality did not touch the L.A. area at all (San Pedro is a near miss like Cape Cod in 1970). The only mainland sites in California in totality were the Point Conception and San Diego areas. Thus the large scientific expedition was on Catalina. For those of us who live here in SoCal it is somewhat ironic that the only clear sky pictures were from Lompoc (near Point Conception on the chronically foggy Central Coast), while the more reliable Channel Island and San Diego areas were completely clouded out. Some Navy pilots from San Diego flew above the clouds to see totality. Centerline hit the mainland at Ensenada, where it was supposedly raining. Inland sites in Mexico had the best view.

L.A. Times coverage of that eclipse was surprisingly sketchy. N.Y. Times coverage was extensive, and most 20th century eclipses that touch U.S. soil have front page stories and several articles in the N.Y. Times.

From: Dave Schmahl

Tony, I've found a website that sells old copies of the NY Times online http://www.historicnewspaper.com/ for any specific day. Would you happen to know the day that pictures were published in the NY Times? Can I assume that it was the 11th?

From: Dave Schmahl

Chris, I found a city library, somewhat nearby, that has copies of Popular Astronomy dating back to the 20's. When time permits, I'll go have a look. Thanks for your help. Dave.

(Continued on page 53)

SETalk

From: Crocker, Tony (FSA)

Probably, but if I were you I'd go to a library and check to be sure. Also, the big story of the day was the Tokyo earthquake. It was just before then and killed upwards of 100,000 people. So I vaguely recall that the eclipse might have had one or two small columns on the front page with more detail inside.

There are other interesting N.Y. Times articles from 1932, 1954, 1964, 1970, 1979, but of course the most detail coverage is of 1925.

Eclipse 1919 / 1874 Venus Transit

From: dietmar.stapsSENL200306wiesbaden.netsurf.de To: SOLARECLIPSESSENL200306AULA.COM Date: Sun, 25 May 2003 09:52:59

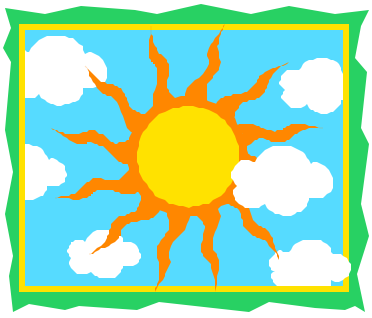
Isis Vol 94, p.57-89(2003) An Expedition to Heal the Wounds of War - The 1919 Eclipse and Eddington as Quaker Adventurer by Matthew Stanley

also of Interest may be : ISIS Vol 93, p.585-613(2002) Photogenic Venus- The "Cinematographic Turn" and Its Alternatives in

Discover april 2003

From: KCStarguySENL200306aol.com To: SOLARECLIPSESSENL200306AULA.COM Date: Mon, 26 May 2003 06:17:11

Greetings Looking through the Discover. Article of page 34-5. A picture of an eclipse taken in Chile ion 4/16/1983 and another comparing the corona to the one othat appeared during the eclipse of 3/7/70. Relating how the theory of relativity was proven in 1919 (why did the author of the article not show the corona eclipse of 1919?) seen in Brzil and African Island of Principe that collaborated on the results to give Einsteins theories a boost. Talks about the ins and the outs of the theory since then. You never know what you will come upon while grabbing a magazine while working out. Dr.Eric Flescher ericsblacksuneclipse.com



ASE 2003

Stansted

From: Christiaan To: SOLARECLIPSESSENL200306aula.com Date: Mon, 12 May 2003 22:28:54

Good day, Some time ago I thought it would be a challenge to travel all the way from London to Durness overland. At the moment I've booked a flight from Eindhoven towards Stansted on may 26, and the flight back will be on june 5. For some reason the person who wanted to accompany me drew back (yes, it is still possible to change the name on the ticket), so I'm in this alone now. Have other people planned to drive/hike from the south of Britain towards the area where te annular eclipse is visible? Is it possible to offer me a lift? groeten, Christiaan

London Local Circumstances

From: Hal Couzens To: SOLARECLIPSESSENL200306aula.com Date: Mon, 12 May 2003 17:51:03

Hi All, I am trying to tie down the moon's height above horizon and bearing in advance of this fridays lunar eclipse for London, UK.

Can anyone tell me or point me to a site with this information or a freeware ;)) package for a mac that i could work it out from? Thanks Hal Couzens

From: Gerard M Foley

http://ssd.jpl.nasa.gov/cgi-bin/eph

should tell you all you want to know, and, if you're not careful, a lot more! Good Luck Gerry

From: Glenn Schneider

Hi Hal, http://balder.prohosting.com/~stouch/MOONCLOCK.html

It's usually "shareware" - but happily unconditionally freewarewe to anyone on SEML.

Cheers, Glenn Schneider http://nicmosis.as.arizona.edu:8000/

From: F.Podmore

Here's something that should help Hal (and others). Altitude is 17 degrees and sinking. And there are links to eclipse photographs too.

http://news.bbc.co.uk/2/hi/science/nature/3020737.stm Francis

Recommended Time Exposures-May 31,2003

From: Raymond Badgerow To: solareclipsesSENL200306Aula.com Date: Thu, 15 May 2003 00:33:15

With the annular solar eclipse rapidly approaching I went out and used my solar filter device with 300 mm on the uneclipsed Sun. I was only able to have time to use a 400 ASA film.(I procrastinate too much). With ASA 400 film SENL200306 f/5.6 I was able to get a sharp image with exposures from 1/1000 to 1/1500 second. Can anyone recommend a set of exposures for a 36 roll ,and at what time intervals(say 10 min) during the partial phases.I will be travelling with Fred's group and will be viewing the eclipse from northern Iceland(weather permitting). In the event of a repeat of last year's event ,what exposure should I do?.

From: Andrew Wells

Raymond Badgerow wrote: With the annular solar eclipse rapidly approaching I went out and used my solar filter device with

(Continued on page 55)

ASE 2003

300 mm on the uneclipsed Sun. I was only able to have time to use a 400 ASA film.(I procrastinate too much). With ASA 400 film @ f/5.6 I was able to get a sharp image with exposures from 1/1000 to 1/1500 second. Can anyone recommend a set of exposures for a 36 roll ,and at what time intervals(say 10 min) during the partial phases.

Ray, thanks for posting this. What sort of aperture were you using with these exposures?

> I will be travelling with Fred's group and will be viewing the eclipse from northern Iceland(weather permitting). In the event of a repeat of last year's event ,what exposure should I do?

And what is "a repeat of last year's event", please? - I'm something of a newbie. Cheers Andrew

From: Raymond Badgerow

I'll be using a 300mm zoom lens on my automatic camera. As for the "repeat of last years event", I was referring to the June 10,2002 annular eclipse as seen from a beach south of Puerto Vallarta where we almost clouded out by the barest of margins.

From: Dale Ireland

Hi You might want to try a little longer exposure, 1/500 rather than 1000-1500 for the annular phase because the limb area of the Sun is darker. Bracket bracket bracket Dale

From: Raymond Badgerow

I will try that. Can you suggest an exposure sequence for the entire event,weather permitting.

Orkney

From: Andrew Wells To: SOLARECLIPSESSENL200306AULA.COM Date: Fri, 23 May 2003 18:33:00

Hi I wondered if anyone else was going to be in Orkney for the eclipse? We're going up on Monday for a week. "The prospects for seeing the annular eclipse of the sun early on Saturday are looking reasonably good - though with a possibility of hazy conditions (which could be an advantage)." - http://www.orcadian.co.uk/weather/index.html Andrew

Scotland's annular eclipse

From: Govert Schilling To: Solar Eclipse List <solareclipsesSENL200306aula.com> Date: Mon, 26 May 2003 08:45:24

I'm wondering what we can expect next Saturday in terms of darkness: will the annular eclipse be large enough to have a noticeable effect on the ambient light level? How will this influence the advance of twilight? Will the effect be stronger or weaker with an overcast sky? --Govert http://www.govertschilling.nl

From: Jörg Schoppmeyer

I think every annuular eclipse has a noticeable effect on the ambient light level, no matter if it's clear,cloudy or overcast. I watched 5 annular eclipse near sunset (May 1984 in Morocco,Jan. 1992 in California,May 1994 in Morocco,December 2001 in Costa Rica and June 2002 in Mexico). In May 1984 it was clear,in 1992 it was cloudy, in 1994 it was clear again, in 2001 and 2002 I had an overcast sky. At all 5 eclipses the change of the light level was easy noticable. In my opinion the effect is stronger when the sky is overcast.

Annular eclipse 31-May, Scotland

From: Geert Vandenbulcke To: SOLARECLIPSESSENL200306AULA.COM Date: Tue, 27 May 2003 16:45:55

Hi, as usual, tales of "fully booked hotels", "no more rooms available" and "lots of people travelling on eclipse day" abound. Does anyone from UK/Scotland have a more realistic picture about this, after all it is "only" an annular eclipse. Best of all weather is improving, keeping our fingers crossed... Geert Vandenbulcke Belgium

Live Webcams for May 31 solar eclipse

From: Fred Espenak To: SOLARECLIPSESSENL200306AULA.COM Date: Thu, 22 May 2003 14:56:52

I'm looking for links to add to the NASA Eclipse Home Page for live webcam coverage of the May 31 solar eclipse. Does anybody know of any links they can share? Thanks, Fred Espenak

From: Stefano Rosoni

Hello, Mr. Espenak, you can try to write to: <astro-clubSENL200306snerpa.is> that is the only one astronomical club in Iceland (info by Sky and Telescope:

1 Club in Iceland

Name: Stjornuskodunarfelag Seltjarnarness
Category: Club
Address: Valhusaskola, IS-170 Seltjarnarnes, Iceland
Contact: Snaevarr Gudmundsson
Phone: 354-561-2424
E-mail: astro-clubSENL200306snerpa.is
URL: http://club.snerpa.is/astro
Other Info: 80 members

There are also: Ytra Lón <ytralonSENL200306mmedia.is> (Ytra LÃ³n) that is the most north-east hostel in the country; "Icel. YH Assoc./Steffi Otto" <steffiSENL200306hostel.is> that is a local touristic organization;

and the universities sites:
http://www2.unibo.it/infostud/fare/eurouni/islanda.htm
http://www.rhi.hi.is/
http://www.khi.is/
http://www.unak.is/template1.asp?PageID=246

Best regards, Stefano Rosoni

From: Nicki Mennekens

Hi, Once again, some live coverage sites are linked at my homepage, http://members.lycos.nl/mennekens/eclips/engels/live_en.html. Grtz, Nicki

From: Eiichi Wada

Hi eclipse friends ! As Nicki linked to our website, our team will webcast from Iceland and Finland. LIVE! ECLIPSE 2003 Annular http://www.live-eclipse.org/index.html.en But unfortunately pages are still under translation from Japanese. Please wait for a moment. I'll leave Japan to Iceland at 9 hours later. Cheers and clear skies at the "top of the globe". Eiichi Wada, LIVE! UNIVERSE

From: Babak A. Tafreshi

Dear All, It might be a late announce, but we have just made sure of our real webcasting for May 31 eclipse from Iran. There is going to be two websites from Tehran and Isfahan webcasting the event (around 0.4 magnitude partial eclipse). www.nojum.net is the website of the Nojum magazine, the only astronomy magazine of Iran which is going to do it from Zafaraniye educational observatory of Tehran. www.parssky.com will also do it from Isfahan Adib astronomical

society, the website still is just in farsi though. Clear Skies for the eclipse day Babak Tafreshi Editor at Nojum, Iranian Magazine of Astronomy webmaster of www.nojum.net

From: F.Podmore

HELP!!! I deleted emails with webcam info for the eclipse tomorrow because I hoped they'd be accumulating on Fred Espenak's webpage for the event, but when I checked yesterday there were none!! so, could some of those who are running webcams, or are planning to watch it by webcam, send me the webaddresses again PLEEZE!! And can you also say (1) WHEN the 'broadcast will start and end (2) what the refresh rate is - i.e. how often will a new image appear?

I've not tryed watching by webcam before, so don't know if this PC has the appropriate software - I assume it's not like a video with a continuously changing picture. And I'd like several wedaddresses to try in case some are clouded out. GOOD LUCK! and thanks in advance for the info. (You haven't got long to send it!!) Yours gratefully, Francis

From: F.Podmore

Thank you, but WHAT IS THE WEBSITE ADDRESS??? And where will the webcam be - in Iceland? in Scotland? in the path of annularity?

From: Mike Simmons

Francis, In the path of annularity:
http://www.live-eclipse.org/index.html.en
http://eclipse.span.ch/liveshow.htm
http://www.xs4all.nl/~pablito/Zon/2003-05-31/Zon1.html (3 refresh rates to choose from)
http://www3.mira.be/sun-eclipse/

Partial eclipse:
http://www.astronomy.no/live/ (several to choose from in Norway)
http://www.nojum.net/live/index-e.asp (Tehran, Iran)
http://www.parssky.com (Esfahan, Iran)

Weather cam from Fair Isle, Scotland: http://www.northisles-weather.co.uk/ Mike

From: F.Podmore

Mike, Many thanks for those links - I haven't had many replies (three in fact!) and am most grateful. FYI the MIRA link is in Belgium and expecting only 70%, i.e. not in annularity path. And the second website is all in Dutch, but I'll just have to experiment, unless some kind person can translate it for me quickly... In addition to Klipsi's 2 links, one from Iceland, but seems to be Japanese, the other reply is from Italy: www.uai.it Perhaps I'll get some more replies before tomorrow. Best wishes, Francis

From: Mike Simmons

Another live web cam I just heard about: My group is in Iceland at this time and intend to have live images of the annular eclipse. Our site is http://www.eclipselive.com. This will be our 6th webcast of an eclipse, and our first annular (if weather permits). Robert Raye Webmaster, Technical Specialist profjohn.com & eclipselive.com

From: Harvey Wasserman

This webcam is up at 10:50 PM EDT. Great shot of sun just above a cloud deck. Looks like it could happen! Let's hope. Wish I were there!!! http://www.live-eclipse.org/index.html.en Harvey Wasserman

ASE 2003

<bracket> <bracket what?>

From: Assoc Prof J R Huddle To: Solar Eclipses Mailing List <SOLARECLIPSESSENL200306AULA.COM> Date: Wed, 28 May 2003 18:11:27

Francis advised his daughter in Edinburgh to use as much magnification as possible, and to use a proper solar filter, and to run some test shots. All good pieces of advice; I'd add to be sure to use a tripod, and a cable shutter release to avoid vibrations, and to bracket exposures around whatever exposure she found best during her tests. Jim Huddle

From: Cliff Turk

Hello Francis I suggest you read the last chapter of my book "Understanding Eclipses" which you ordered at the time of the 21 June 2001 eclipse. It is quite short and will give you more than enough information for your daughter. Cliff Turk

Original Message ----- From: "F.Podmore" <podmoreSENL200306science.uz.ac.zw>

Hello friends, My daughter in Edinburgh, not an eclipse expert, wants some basic guidance on how to photograph the ASE on 31 May.

I said, put as much magnification as you can on the camera (Pentax K1000), cover the objective with solar filter material, and take some trial shots of the clear sun, noting the aperture&shutter speed used, then get them developped quickly.

But how should this plan be adjusted as the ASE proceeds, if at all?

Can someone give any quick/simple guidelines?

I guess this is for those of the SEML who aren't already out of range on Iceland or the Orkneys!! ENJOY the experience!! Thanks, Francis

Durness meeting?

From: Govert Schilling To: Solar Eclipse List <solareclipsesSENL200306aula.com> Date: Wed, 28 May 2003 20:05:37

I'm sure most eclipse chasers have left home already, but does anyone remember where and when we were supposed to meet on the evening of Friday, May 30 in Durness?? --Govert http://www.govertschilling.nl

From: brian seales

Hi Govert, It was the bar in the The Smoo Falls Hotel, where Hilary Bradt is staying, where I think most people decided to meet. Kris and Katherine Low are going to be there on the 30th at 1900 to meet those arriving early. We will be there later on that night. Regards, Brian Seales www.ecliptomaniacs.com

Eclipse weather

From: Evan Zucker To: SOLARECLIPSESSENL200306AULA.COM Date: Fri, 30 May 2003 05:06:01

I'm afraid the weather is looking very typical for this time of year in Scotland and Iceland, which is to say lousy for eclipse viewing:

Reykjavik: http://weather.yahoo.com/forecast/ICXX0002_f.html

Inverness: http://weather.yahoo.com/forecast/UKXX0250_f.html Evan H. Zucker San Diego, California

ASE 2003

Inverness area viewing spots

From: Jmeccleston To: SOLARECLIPSESSENL200306aula.com Date: Thu, 29 May 2003 14:44:04

I was intending to be in Durness by Friday evening, but I have a funeral to attend in London on Friday, so am now flying to Inverness at 2000, if seats are available. I do not wish to drive across the hills overnight, so seek a suitable location near Inverness. I also think the weather forecast looks better for there. Any suggestions? Anyone around there I could meet up with? Jeffrey

From: Jean-Paul GODARD

I will fly from Paris to be in Aberdeen at 1100 on friday Then going North following east coast A french group will be around Embo (close to Dornoch) 50km from Inverness Cordialement, Martine & Jean-Paul ("We met in Moon's Shadow") tlouzeauSENL200306noos.fr jean-paul.godardSENL200306noos.fr

From: Chris O'Byrne

The ecliptomaniacs will be staying in the Loch Ness Lodge Hotel in Drumnadroicht, though we will have our own transport, and will probably view the eclipse from either Durness (preferably) or John O'Groats (depending on the weather). Chris

Report from Iceland

From: Jay.M.PasachoffSENL200306williams.edu To: solareclipsesSENL200306aula.com ate: Fri, 30 May 2003 00:36:07

May 29 I have just seen the sun set at 11:23 pm into the sea, with even a bit of green flash, after a beautifully clear day here. At its slight angle of motion to the horizon, the sun took at least 6 min to set, and I came upon it partially obscured by the distant horizon.

I arrived in Reykjafik early this morning, and found the sky completely clear, with perhaps less than 1 degree of cloud on the eastern horizon. The city itself has some mountains to the east, so the annular phase won´t be visible from in town.

I met Fred Espenak at my hotel, and he was about to set out for the north with about 20 people. Later, I met Snaevarr Gundmundsson, the amateur astronomer who wrote an excellent article a couple of months ago in Sky & Tel. He entertained Paul Maley and his group at the private observatory here this morning. I spent most of the day with Thorsteinn Saemundsson, the professor of astronomer at the University, with Einar Gudmundsson, a theoretical astrophysicist at the University joining us for lunch. (The latter had been at my institution, Williams College, in 1988 for the International Astronomical Union Colloquium we had on the Teaching of Astronomy.)

Unfortunately, the weather forecast is not good for tomorrow and the time of the eclipse, which is annular at 4:00 am the next morning. The local people hold out hope for the prediction being wrong, but we do have the possibility we are looking into of chartering a plane. Good luck to all. Jay Pasachoff

From: Jay.M.PasachoffSENL200306williams.edu

noon Iceland time = noon U.K. time

Clouds have moved in to Reykjafik, though there is still some sun. I am planning to fly tonight to the northwest, which is predicted to be the last location that the front will reach, and we will try to see the eclipse either from the airport there or from the air. Jay Pasachoff

TSE 2006

Turkey, 2006...

From: KidinVSSENL200306aol.com To: SOLARECLIPSESSENL200306aula.com Date: Thu, 01 May 2003 16:37:32

I have returned from Turkey, where I spent a week doing my site inspecion for the March 29th, 2006 eclipse tour that I will be putting together. The results are just wonderful!!!! This was actually my 4th visit to Turkey... twice to plan the 1999 eclipse, once for that eclipse, and now, this trip. Anyone planning to visit Turkey for the eclipse will be totally delighted with the country. The people are wonderful, the food is great, the better hotels are all first class all the way, and even with the world events as they are now, I was never in any fear. The Americans that I ran into felt the same as I did... safe, and welcomed. The southern coast of Turkey is the area I concentrated on, as the area offers the best potential for good weather, and it is just beautiful. The town of Side is the seaside town that is on the centerline, and has many 5 star hotels, a few of which offer great vantage points to observe the eclipse. Any of the beaches will offer unobstructed views of totality and the oncoming shadow, but the sea level elevation will have slightly obstructed views of the departing shadows as the "skyline" of the hotels will create a slight problem... really, though, nothing to worry about. The area is very rich in ancient history... this is the area of ancient civilization. A few of the ancient cities are fansastically preserved, and absolutly must be seen. The currency is fairly stable at the moment. The excitment of Zimbabwe for my last 2 trips was easy to feel, even before the trip, as not a lot of people considered Africa as a good spot. Those that were there will certainly agree, I think, that the experience was totally unforgettable and wonderful. I can promise that those that visit Turkey will have a different, but equally wonderful time... good weather, or not. Rick Brown EclipseSafaris

From: AlcovedbaseSENL200306aol.com

Hi Rick, I have just read your message and could not take myself from thanking you in praising my home country! I can't agree more with your assessment of Turkey's characteristics; people, weather, culture, history, civilization, food and more. Actually, upon my earlier emails sent to the SEML, I had received several questions regarding possible eclipse viewing locations from the southern coast of Turkey. I have been working to put together some information, including places to stay, to visit (including the Turkish National Observatory - http://www.tug.tubitak.gov.tr/), weather conditions, etc. However, I have had rather a busy schedule at my office for the last couple of months and think that I will be able to complete this resource list for the Turkish 2006 eclipse not before the end of June. My workload also prevented me to travel to Turkey to observe next Wednesday's transit of Mercury. So, I just cross my fingers that the unpredictable New England weather will cooperate to let me see the last one hour or so of the transit from my home, here in Boston.

I'll be glad to share my eclipse viewing information with all of you when I get it ready. Until then, clear skies and good luck for the transit on the 7th! Haldun I. Menali Amateur Astronomer Investment Bank Senior Manager Boston, MA http://members.aol.com/astroalcove/index.html

Turkey weather info?

From: AlcovedbaseSENL200306aol.com To: SOLARECLIPSESSENL200306aula.com Date: Sat, 24 May 2003 05:33:51

Hi Govert, There are three major cities on the centerline, close to Tuz Golu: Konya, Aksaray and Kirsehir. http://www.wunderground.com gives some historical data for Konya, but not for the two others. As I had mentioned on my email of 5/2, I have been gathering information for the TSE '06 and will hopefully be able to post it on my website, sometime in June. As part of this effort, I am communicating with the Turkish State Meteorological Services to get some statistical data about the weather, mostly on the southern cost where I will be heading to. If and when I get something tangible, I will be more than willing to share it with you.

Clear skies and good luck to those who go to the "top of the globe" on 5/31. Haldun I. Menali

> From: Govert Schilling Has anyone on this list detailed weather information available about the weather prospects in Turkey on March 29, 2006? I'm especially interested in statistical information about the region between Aksaray and the Tuz Golu salt lake. --Govert http://www.govertschilling.nl

Joanne & Patrick

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TSE 2006

Turkish eclipse

From: Bob Morris To: eclipse-list <SOLARECLIPSESSENL200306AULA.COM> Date: Tue, 27 May 2003 21:47:50

This is the web site for the March 2006 eclipse:

http://newton.physics.metu.edu.tr/~aat/TSE2006/TSE2006.html

This is the site showing sunny day "iso-lines" which shows a 3000 hours of sunshine per year iso-line around Antalya Bay! Much better than inland!

http://pluto.cc.ankara.edu.tr/~derman/dermanenglish/sitetesting88/sittesting88.html

This is 8 hours per day!

Now this was mid-1980s but ... will it have changed much? Bob Morris

From: Govert Schilling

Bob: This is the site showing sunny day "iso-lines" which shows a 3000 hours of sunshine per year iso-line around Antalya Bay! Much better than inland! http://pluto.cc.ankara.edu.tr/~derman/dermanenglish/sitetesting88/sittesting88.html This is 8 hours per day! Now this was mid-1980s but ... will it have changed much?

Probably not. But I'd rather see a map somewhere with sunshine and/or cloud cover figures specifically for late March. --Govert http://www.govertschilling.nl

Joanne Poitevin's C90 and Sony Camera in action during the Transit of Mercury May 7, 2003 (picture by PP)