Volume 9, Issue 6
SOLAR ECLIPSE NEWSLETTER

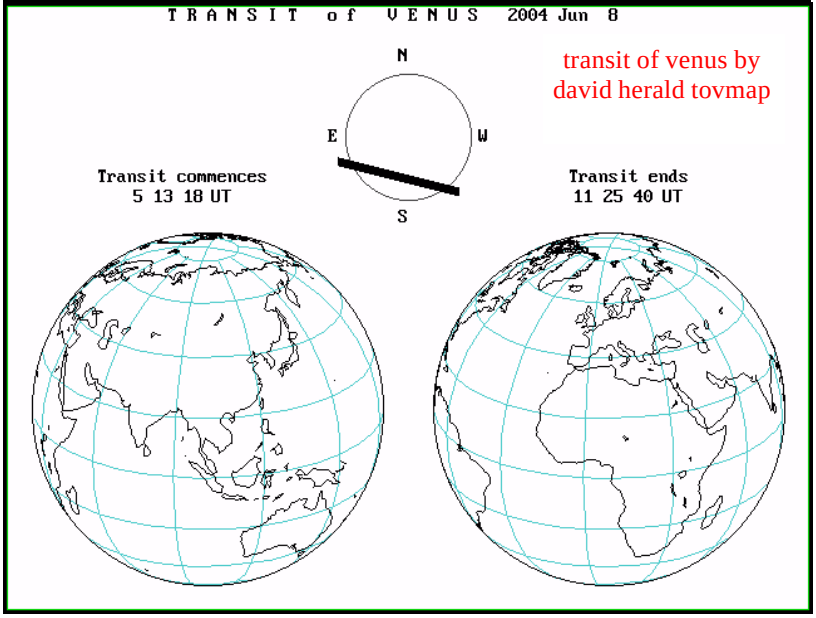
June 2004

SOLAR ECLIPSE NEWSLETTER

The sole Newsletter dedicated to Solar Eclipses

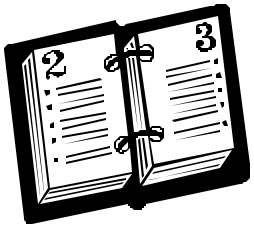
INDEX

Hi, This Solar Eclipse Newsletter is mainly dedicated to the coming Transit of Venus. Please enjoy!!! Success to all to observe the Transit. Joanne & Patrick

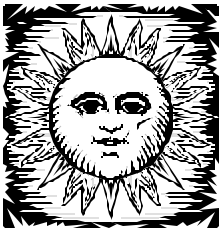


transit of venus by david herald tovmap

SECalendar



June 2004



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.

(Continued on page 3)

SECalendar

(Continued from page 2)

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)

(Continued on page 4)

SECalendar

(Continued from page 3)

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.

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.

(Continued on page 5)

SECalendar

(Continued from page 4)

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 Scientists, 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 mid-summer'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

(Continued on page 6)

SECalendar

(Continued from page 5)
in 1610, predicted a Solar Eclipse for this date. Jesuit missionaries, however, insisted that the prediction was an 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 Galilei 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 26, 1940 Birthday of two solar eclipse specialists: Serge Koutchmy (France) and Tom Van Flandern (USA). Both eclipse guru's in their field.

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.

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

(Continued on page 7)

SECalendar

(Continued from page 6)
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, 1947 Birthday of Jay Anderson. No one will travel to a solar eclipse without first consulting the weather forcasts of Jay Anderson (Canada).

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 time of the eclipse.

(Continued on page 8)

SECalendar

(Continued from page 7)

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 sungrazing 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 re lated messages coming ...

Best regards,

Patrick and Joanne

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

SECalendar

SECalendar June - June 30th 1954 TSE

Date: Fri, 28 May 2004 From: "Michael Gill" To: solareclipsewebpagesSenl200406btopenworld.com

Patrick Poitevin <solareclipsewebpagesSenl200406btopenworld.com> wrote: > June 30, 1954 The last total solar eclipse in Britain was 30 June 1954.

Hi Patrick, I guess this entry pre-dates the 1999 TSE, so it should now be reworded. Cheers, Michael

SEScannings

Index SENL May 2004

Dear all,

Please find herewith the Index of the May 2004 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 solareclipsewebpagesSenl200406btopenworld.com

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

Best Regards,

Patrick and Joanne

solareclipsewebpagesSenl200406btopenworld.com
http://solareclipsewebpages.users.btopenworld.com

SEScannings

Index SENL May 2004 - Error in Archive SENL

Date: Wed, 12 May 2004 From: Jay.M.PasachoffSenl200406williams.edu To: SOLARECLIPSESSenl200406AULA.COM

I just enjoyed looking over the May archive of SENL. I see on p. 44 there is the letter from me giving my Website for the Archive. The word ahead of that in the URL is "eclips" while it should be "eclipse"; I don't know if that can be modified on line. Also, the photo is cropped just a bit on the top so you can't see that the mountain behind is Cape Town's famous Table Mountain.

It's nice to have this pdf. Best wishes, Jay

Milestones for SE (Compiled for VVS Belgium)

WGZV: October 22, 1994 Birth of the Solar Eclipse Section, VVS Belgium (Werkgroep Zonsverduisteringen). The date this decision was made by the VVS board, the founder and proposer Patrick Poitevin was in Bolivia for the Total Solar Eclipse of November 3, 1994.

DDD1: November 25, 1995 The first DDD (De Duistere Dag or The Dark Day), organized by the Solar Eclipse Section (Patrick Poitevin), VVS Belgium in Volkssterrenwacht Mira in Grimbergen, Belgium. Speakers where Jean Meeus (triangles and eclipses), Felix Verbelen and Anton Vollemaere (Codex: Eclipses and Maya's) and Patrick Poitevin (Eclipse November 03, 1995).

SENL: November, 1996 First issue of the Eclips Nieuwsbrief (Eclipse Newsletter). Monthly magazine of the Solar Eclipse Section, VVS Belgium. Editor and founder Patrick Poitevin. Patrick continued the SENL (Solar Eclipse Newsletter) after leaving the Solar Eclipse Section and edited the SENL with partner Joanne Edmonds. The SENL issues can be downloaded (free of charge) from the webpages of Fred Espenak.

SEML: December 10, 1997 Start of the Solar Eclipse Mailing List (Solar Eclipse List) on internet. This is the first worldwide Mailing List on Solar Eclipses. Jan Van Gestel from Belgium offers the server, Patrick Poitevin is the Solar Eclipse List Owner. After 3 years there are between 280 and 300 subscribers out of more then 35 different countries.

DDD2: March 28, 1998 The Solar Eclipse Section (Patrick Poitevin) organized for the VVS Belgium DDD2 (De Duistere Dag 2 or The Dark Day 2) in the Europlanetarium Genk, Belgium. Speakers were Wasyl Moszowski (Total Solar Eclipses since 1983), Jan Janssens (FNOES and EAGB eclipse observations) and Patrick Poitevin et al (Eclipse of February 26, 1998).

WGZV: December 01, 1998 Patrick Poitevin hands over the Werkgroep Zonverduisteringen (Solar Eclipse section) of the VVS to Guido Gubbels. Patrick keeps running the Solar Eclipse Newsletter and Solar Eclipse Mailing List independed from the VVS (Flemish Astronomical Association). From now on, the Newsletter is available electronicly on the WebPages of Fred Espenak (NASA).

SEC2000: October 14, 2000 The first International Solar Eclipse Conference (SEC2000) in Elzenveld Antwerp Belgium organized by Patrick Poitevin and Joanne Edmonds (14-15.10.00). A Crossroad on Physics and Eclipses of the Sun. Speakers in chronological order: B. Foing, S. Koutchmy, E. Verwichte, F. Clette, B. Jones, P. Maley, G. Meiser, J. Anderson, P. Kalebwe, J.C. Casado, E. Hiei, O. Staiger, D. Makepiece, J.M. Lariviere, V. Rusin, D. Berghmans, R. Chou, J. Hopper, D. Fischer, F. Espenak, J. Pasachoff, F. Podmore, E. Krupp, J. Steele, F. Verbelen, R. F. Stephenson and P. Tiedt.

TD2001: August 11, 2001 First Totality Day. TD2001 was held in the Open University of Milton Keynes (England) as a continuation of De Duistere Dag (The dark day) which PP organized in Belgium. Speakers at TD2001 were Prof. Ken Phillips, Prof. Richard Stephenson, Dr. Francisco Diego, Ass. Prof. Jim Huddle (US), Dr. Francis Podmore (Zimbabwe), Dr. Edward Hanna, Dr. Barrie Jones, Sheridan Williams, Daniel Fischer (Germany), David Hardy, and Joanne Edmonds. Video's from Richard Bareford (US) and Wolfgang Strickling (Germany). The 75 attendees were from 7 different countries.

E-Team: February 02, 2002 The E-Team, Joanne and Patrick Poitevin got married. Patrick and Joanne host the Solar Eclipse Mailing Lists, organizes Totality Day and the international Solar Eclipse Conference and edit the Solar Eclipse Nwesletter eand their So-

(Continued on page 11)

SEScannings

(Continued from page 10)
lar Eclipse WebPages.

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

TD2003: February 08, 2003 Second edition of Totality Day, held in the Open University of Milton Keynes, England. Organizers of TD2003, Joanne and Patrick Poitevin welcomed lectures and presentations from Chris O'Byrne (Ireland), Daniel Fischer (Germany), Eric Strach (UK), David Forshaw (UK), Joanne Poitevin (UK), Olivier "Klipsi" Staiger (Switzerland), Prof. Dr. Barrie W. Jones (UK), Sheridan Williams (UK), Dr. Eric Jones (UK), Derek Hatch and Mike Foulkes (UK), Dr. Alan Ridgeley and Dr. Brian Sheen (UK), Dr. Voyto Rusin (Slovakia) and Prof. Dr. Miloslav Druckmuller (The Czech Republic), Andrew and Val White (UK), Ted Thurgur (UK), Nigel Evans and Patrick Poitevin. There were 70 attendees. The next conference will be SEC2004 on 20 - 21 - 22 August 2004 in the same Open University of Milton Keynes.

SEC2004: August 20, 2004 Second edition of the international Solar Eclipse Conference (SEC2004) in the Open University of Milton Keynes (UK) organized by Patrick and Joanne Poitevin (20 - 22.08.04). Speakers in alphabetical order: Jay Anderson (Canada), Ralph Chou (Canada), Friedhelm Dorst (Germany), Leo Dubal (France), Fred Espenak (USA), Nigel Evans (UK), Mike Foulkes and Derek Hatch (UK), Jean Paul Godard and Martine Tlouzeau (France), Pierre Guillermier (France), Peter Hingley (UK), Barrie Jones (UK), Serge Koutchmy (France), Jean Marc Lariviere (Canada), Eli Maor (USA), Chris O'Byrne (Ireland), John Parkinson (UK), Jay Pasachoff (USA), Vojtech Rusin, Milan Minarovjech (Slovakia) and Miloslav Druckmuller (Czech Republic), Eckehard Schmidt (Germany), Glenn Schneider (USA), F. Richard Stephenson (UK), Babak Tafreshi and Hamid Khodashenas (Iran), Peter Tiedt (South Africa), Tom Van Flandern (USA), and last but not least Robert van Gent (The Netherlands).

Astronomy & Astrophysics

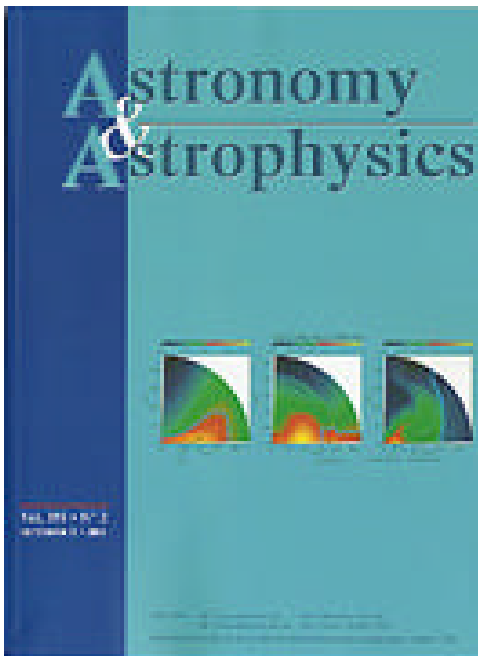
From PP

Dear All, Astronomy & Astrophysics placed in Vol 419 No 3 June I 2004 a full page announcenemt of the international Solar Eclipse Conference SEC2004. You will notice as well the nice poster Fred Espenak desined for the conference folder.

Aims and Scope of the revue "Astronomy and Astrophysics":

http://www.edpsciences.org/aa

Astronomy and Astrophysics, a European Journal, publishes papers on all aspects of astronomy and astrophysics: theoretical, observational and instrumental, independently of the techniques used to obtain the results. Best regards,



SETalk

TLE Report: Sydney

From: "Sharon Grey" To: SOLARECLIPSES-Senl200406aula.com Date: Wed, 5 May 2004

G'day! Sydney (Darling Point): lovely, mild pre-dawn; slight cloud towards the west and through ambient conurbation light. Visible just through 2nd/3rd contact, then obscured from encroaching dawn. My 11 year-old daughter and I thought TLE viewing was a fabulous way to start the morning.

Hope everyone else is having spectacular viewing, too. Best regards, Sharon Grey

TLE from Denmark

Date: Tue, 04 May 2004 From: "Stig Linander" To: solareclipsesSenl200406aula.com

Most of Denmark was covered by clouds but here in the Copenhagen area we had acceptable weather.

The partial phase started at moon-rise, so in the beginning the Moon was quite blurred and hazy. But the last half of totality was perfect. At the end of totality, clouds came and covered the Moon.

A dark rust-colored eclipse - only a little brighter at the outer edge of the umbra. An average TLE - or perhaps a little bit darker than average. My judgement: Danjon: L = 2 - or perhaps 1.8 (http://sunearth.gsfc.nasa.gov/eclipse/OH/Danjon.html). Best regards, Stig.

TLE Report: Belgium

From: "Nicki Mennekens" To: SOLARECLIPSES-Senl200406AULA.COM Date: Tue, 04 May 2004

Vilvoorde, Belgium: overcast. Nothing to report... More links at http://users.telenet.be/nmenneke/eclips/engels/maan04a_en.html. Regards, Nicki Mennekens

From: "Geert Vandenbulcke"

Hi, Most of Belgium too had clouds. A large break along the coast however let me see the eclipsed moon minutes before the end of totality. I had the impression that this was a rather bright eclipse, considering low altitude above horizon and cloudiness, but wouldn't risk a Danjon estimate under these conditions though and since I haven't seen mid-totality. Goodnight, Geert Vandenbulcke

TLE from South Africa

From: "Peter Tiedt" To: "Solar Eclipse Mailing List" Date: Wed, 5 May 2004

Clouds threatened to obscure the event, and although remaining thin to clear did not do too much damage.

Estimate of Danjon 1.5 - 2, with a brightish limb and a very dark almost invisible limb.

The bright limb was yellow brown, and the dark limb almost black, certainly no red.

Centre of the moon's disk was a yellow brown to ash grey. Red / copper coloration almost absent in favour of the browns.

This was the third of the tetrad observed here from South Africa, the 4th due in October.

TLE from Ireland

From: "Daniel Lynch" To: SOLARECLIPSESSenl200406AULA.COM Date: Tue, 04 May 2004

A group of 50 amateur astronomers braved the awful conditions in Sandymount Strand, Dublin, in the hope of seeing the red moon rising across the Irish sea. Typically we were completely clouded (and rained) out of it.

I still retain my run of not having seen a lunar eclipse since my first and only in 1989. I was aged 6 then... All the best, Daniel Lynch

TLE from Tenerife

Date: Tue, 4 May 2004 From: mrkSenl200406iac.es To: SOLARECLIPSESSenl200406AULA.COM

I was observing with the Moon at very low altitude and initially with intermitant cloud. I alternated naked eye observations with tripod-mounted 20x80 views through the sitting room window!

I was struck by the very bright yellow limb to the edge of the umbra. There was a great deal of contrast between it and the opposite limb which was barely visible even with the 20x80. Very little colour - probably due to low altitude - with browns the predominant shade in the umbra.

My estimate was Danjon 2. Mark Kidger

From: Jay.M.PasachoffSenl200406williams.edu

I guess you had "Tenerife" in the headline, so I won't see you when I am on La Palma. Jay

SETalk

TLE from Germany

Date: Wed, 05 May 2004 From: "Marc Weihrauch" To: solareclipsesSenl200406aula.com

Dear friends, here in Halle (Saale) I experienced a complete clouded-out. From local moonrise at 18.29 UT until now not the slightest bit of Luna could be seen - although the sky was partially clear. The only mass of clouds and haze that stayed permanently were to the Southeast, were the eclipse was going on...

However, there are reports of at least partial success from other parts of Germany. Our friend Alexander Birkner from www.kernschatten.info told me on the phone that he did see parts of the deep partial phases. He is trying to put some first phtots online within the next hours. Cheers! Marc

From: "Stefan Krause"

Dear all, we were lucky in the Westerwald area near Bonn/ Germany; we watched the whole eclipse from moonrise until the second partial phase. Pictures and a report will apear on our lunar eclipse page (http://www.mondfinsternis.net/ within the next few ours. Greetings from Bonn Stefan

Total Lunar Eclipse 04/05/2004 - Live webcam from Gran Canaria (Canary Islands)

From: "Babak A. Tafreshi" To: SOLARECLIPSES-Senl200406AULA.COM Date: Tue, 4 May 2004

There are also two websites which will webcast the upcomming total lunar eclipse from Iran, one is Nojum, astronomy magazine of Iran, webiste (www.nojum.net) and the other is www.parssky.com . Both groups will send snapshots, every few seconds, it's not streaming, but it benefits from the site shots taken from amateur astronomers and their activities during the event in cities of Tehran and Isfahan. The weather is not very promissing here right now but we will stay fingers crossed. Regards Babak A. Tafreshi

From: "Babak A. Tafreshi"

Overcast and raining from Tehran, we stoped the webcast through www.nojum.net in the very beggining. Though the other group in Isfahan (www.parssky.com) were fortue enough to webcast most of the event. Wishes for clear skies in our venus transit webcast. Babak A. Tafreshi

TLE from Cambridge, England

From: "Richard Monk" To: SOLARECLIPSES-Senl200406AULA.COM Date: Wed, 5 May 2004

A beautiful view in the SE skies in the remnants of twilight. Apart from wisps of clouds the TLE was visible until just after 10pm BST. Then it was completely clouded out. Richard

TLE Report: Australia

Date: Wed, 5 May 2004 From: "Darren Osborne" To: SOLARE-CLIPSESSenl200406aula.com

What a beautiful sight. The eclipse was certainly one out of the text book. The umbral shadow was very clear as it crossed the face of the Moon and it certainly changed to a red colour. Not as red as the 2000 eclipse, but certainly rich in colour.

I also saw two eta-Aquarids. A great morning overall.

Despite not getting my teleconvertor in time for this eclipse (hopefully for the Transit of Venus), I managed to get a few good shots. Looking forward to others. http://canberrasky.tripod.com/ tse2004/index.html Cheers Darren

From: "Joseph Cali"

Like Darren (we only live 2km apart), I had a great view of the moonset TLE. decided to just watch & enjoy it for once. Looking out from my landing there was a beautiful view as the totally eclipsed moon sank over the north end of the Brindabella mountain's and disappeared into dawns twilight.

At about 20:05UT (altitude approx 6 degrees) the moon was a beautiful coppery bronze colour.ie more brown than red. It's early winter here so the pall of wood fire smoke probably affected the perceived colour especially as the moon became lower in the sky before it vanished into twilight.

A moonset total is very nice. I think the folks in closer to Adelaide probably had the best of it. They got another 20 mins of dark plus the Moonset. Cheers Joe Cali

From: "Fraser Farrell"

Actually many of the folks in and around Adelaide were totally clouded out. So was I, but I'll find out if anyone got lucky at tonight's ASSA meeting. Now waiting for Aug 2007.... cheers,

From: "Bevan Harris"

Clear skies and a great view of the eclipse from Perth. Definitely noticed the lack of red this time round. Also took time out for a peek at Comet Linear 2002T7 (with 4 degrees of tail) during totality plus a few nice eta Aquarids to boot! Cheers, Bevan

SETalk

Delta T

Date: Wed, 5 May 2004 From: "Jean Meeus"

On 2004 April 1, the difference between Dynamical Time and Universal Time was Delta T = 64.62 seconds. Jean Meeus

More information on the Mayan discoveries - sun god face mask

Date: Thu, 6 May 2004 From: "LARRY KLAES" To: HASTRO-LSenl200406LISTSERV.WVU.EDU

Masks, Other Finds Suggest Early Maya Flourished

Stefan Lovgren for National Geographic News May 5, 2004

mayan discoveries 040506_mayamasks

Watch the National Geographic TV Special Dawn of the Maya Wednesday, May 12, at 8 p.m. ET on PBS. At the Mayan city of Cival, Guatemalan archaeologist Francisco Estrada-Belli was walking in a tunnel left by looters when, by sheer chance, he made a major discovery: a massive face mask of a sun god carved on the wall of the main temple pyramid.

The mask-5 meters (16.5 feet) wide and 3 meters (10 feet) tall-was stunning. But what made it truly remarkable was its age, dating back to around 200 to 150 B.C., a millennium before what is considered the height of Maya civilization.

The early years of Maya civilization, the so-called preclassic period-from 2,000 B.C. to A.D. 250-has often been dismissed as primitive, an era lost in myth before the Maya's true rise to greatness.

But new discoveries, like the mask Estrada-Belli found, reveal a society that flourished in the deep jungles of Guatemala long before the time of Jesus Christ. Its features-kings, complex iconography, elaborate palaces, and rituals-may have been just as dazzling as those of the classic Maya.

http://news.nationalgeographic.com/news/2004/05/0504_040505_mayamasks.html<http://news.nationalgeographic.com/news/2004/05/0504_040505_mayamasks.html>

Archaeologist Francisco Estrada-Belli is dwarfed by the enormous stucco face of a Maya deity, found at the Preclassic Maya site of Cival in Guatemala. Estrada-Belli and his team uncovered the second half of the mask in April 2004. His work is supported by National Geographic.

Photo by Bruce Smith

May 4 eclipse photos

From: KCStarguySenl200406aol.com Date: Fri, 7 May 2004 To: [SEML]

at spaceweather.com Check out the beautiful eclipse may 4 photos from Asia etc. I really like the one especially by Beom-Seok Yeom, Seoul, South Korea.May. 04 Very nicely done. Too bad we could not see the eclipse but we have comets . I will have photos of comets F4 and Q4 tonight. http://members.aol.com/kcstarguy/satoriastronomy/satoriastronomy.htm

TLE from France

From: "Jean-Paul GODARD" To: solarECLIPSES-Senl200406AULA.COM Date: Wed, 5 May 2004

We were clouded out too in Paris. Rainy, overcasted and cold. Wheather improved around 0100 GMT and we saw a bright full moon in a clean clear sky... Cordialement,

From: "Odille Esmonde-Morgan& Warwick Lawson"

Here at Terranora (northern NSW, just south of Qld border, it was clear and warm (15 degreesC) and I enjoyed and photographed a very nice TLE. Will scan and post pics next weekend (15/16 May). Not much red, and the sky was quite bright at totality so those pics are a bit washed out. The just before shots, with a sliver of moon, are great. No comet unfortunately, low cloud out to sea in the east prohibited viewing. Odille Esmonde-Morgan Terranora, NSW, Australia http://analog6.members.easyspace.com/analog6Senl200406ozemail.com.au

Lunar eclipse

From: "Josep Masalles To: SOLARECLIPSES-Senl200406AULA.COM Date: Mon, 10 May 2004

Lunar Eclipse 2004 - 05 - 04 http://www.ictisp.com/~jmasalle/ell2004maig04.htm Josep Masalles

SETalk

TLE fraud?

Date: Tue, 11 May 2004 From: "reinder j bouma" To: "SEML"

Dear listmembers, While browsing the Internet for last tuesday's TLE images I came across a very remarkable image on SpaceWeather's Lunar Eclipse Gallery, where you see three additional images mentioned at the end of page 2, the first one of Jelmer Siekmans of Groningen. This surprised me, to say the least, because I live in Groningen as well and had been watching clouds all evening, and so did the rest of the Netherlands. Therefore, I did a quick Google search and, surprise, I found at the following address http:\\www.sterrenkunde.nl\jwg\fotos the same image by the same person, but now labeled 9 January 2001! Apparently some people think that if you've seen 1 TLE, you've seen them all, and nobody will notice the difference.... I think all of you will agree that this interpretation of 'artistic license' is not the way to go to be recognised in an international forum. I have informed the webmaster of SpaceWeather allready om Saturday evening about this 'coincidence', but so far he has failed to answer my mail nor did he take any other action. In the meantime these images are no longer on the frontpage, but are only available in their archive. Despite this I am greatly surprised by their lack of response to what appears to be downright fraud. Have a look for yourself, and let us know what you think. Best regards, Reinder Bouma

To: "rigo rigoletto"

5-11-2k4 Tues. The TLE pix are they a fraud? is more probably a web search gone awry. This can happen to anyone and in the excitement of the moment do not think (in my opinion) that anyone purposely in the questioned reportage used photos from another date. More probable that they just did not see the date on them as the photos are still posted on the net (which is OK) as the person asking about fraud accessing the web site was able to discern but was not under pressure to quickly produce for a real time web site mass quantities of a more recent event. To produce a real time web site or e-newsletter requires a special type of constant work, an endeavor which requires a "24/7" attention. Conclusion: I give them a little slack on this one. (And, in the urgency of the moment of excitement about a recent event, all would benefit by always checking dates on all information no matter what the source is.) At most, just needed a friendly reminder to check dates. (My opinion that all galleries should have complete basic info on photo credits such as a date when image was produced or first published, etc. as well as photographer/image maker credit.. [And can understand the first impressions of the one who found the 'error' in this instance. All of us depend upon certain sites to hold to as high a level of accuracy as possible.] Best, EG =OCMNS= egSenl200406rigoletto.com

From: "reinder j bouma"

I do not think this is the correct answer. SpaceWeather actually does not appear to do a netsearch, but is asking observers to submit their images! So the question remains, why would somebody send an old image the day after a TLE apparently without clear notification that this is an OLD image, when actually hundreds of new images poor in? What is the point of doing that? Of course, you may live happily in the illusion that the world is populated by angels, but unfortunately that is not the case. Have a look at the news on TV or in the newspapers, and you will notice there are some crooks as well. To be sure it was some sort of unintentional error by one of the parties involved and not a deliberate fraud, it would have been nice if the webmaster of SpaceWeather had bothered to check the original submission AND subsequently had answered my query or at least had added some very relevant information to the website. I think he ows that to the public if he wants to maintain his credebility. best regards,

Free! Copies of NASA's 2003, 2002 and 1998 eclipse bulletins

From: "Daniel Lynch" To: SOLARECLIPSESSenl200406AULA.COM Date: Sat, 08 May 2004

Hi Fred, I know it's been a month already since your offer. However, if, and only if, you're still trying to get rid of the Bulletin copies, I'd be happy to take some more. I've already given some to the high schools that I've talked in.

For the transit, I am going to Rome with a friend (who also came to Scotland with me for the annular), where we shall be able to stay in the Irish College. Italian skies are a lot more reliable than Irish ones. I might even try to send an email to Kelly Beatie, who'll be in Rome too, when my uni exams finish.

Looking forward to seeing and hearing you at the SEC. Clear skies, Daniel Lynch - 13, Beech Lawn, Dundrum, Dublin 16, Ireland

PS I really enjoyed Makepeace's video of you on the ice. The sky colour, which wasn't really visible from QF2901, was just awesome. Next Antarctic eclipse, should I be lucky enough to be there, I hope to be on the ground.

From: "Fred Espenak"

Hi Daniel - Yes, I'll mail some more eclipse bulletins to you. See you In August at SEC2004. - Fred

SETalk

Central solar eclipses

From: "zxcvbnm asdfghjkl" To: solareclipsewebpagesSenl200406btopenworld.com Date: Sat, 15 May 2004

When there are two central solar-eclipses in a year there is possible that there are also two total moon-eclipses in the same year. This occurs in the year 2061, but it is the onliest year in the 20-nd and 21-st century. But when you the cases of by example of the year 2003 counts along with it, than you find in the 21-st century also the years 2003, 2043 and 2044. In all this years both moon-eclipses are total, but one or both solar eclipses are OR non-central such as in 2043, OR have just one limit such as in 2003 and 2044. It seems to me that it is nescessary that the inclination of the orbit of the moon about 5 degrees 00' is and not by example 5 degrees 18'. And now I am looking for a two-span of years such as 2043/2044 in which occurs in total four moon-eclipses, all four total, such is mentioned the "tetrade" and also in which occurs four solar-eclipses in a row which are central and also have ALL two usual limits, thus NOT one-limit such as 2003, May 31, have. Perhaps can Jean Meeus such calculate this for a time-span of, if it is possible for him, in a period of more thousands of years to find such a two-span of years.

Than the next thing: Most of you already know that there are in 1909/1910
three solar-eclipses P {T} P, than a saros later in 1927/1928
there are four solar-eclipses P {T- Pb} P, thereafter in 1946, 1964, 1982, 2000, 2018/2019, 2036/2037, there occurs P {P-P} P , in 2054/2055: P {Pe-P} P and finally in 2072/2073 you get P {T} P. From 1909/1910 till 2072/2073 the first and the last solar-eclipse remaims partial, but the second and the third eclipse changes very quickly from T to Pe and from Pb to T. Does somebody know if there are more rows of years in other centuries with this same occurrance? Next the third item. I have caculated all the differences between the "gamma's" of both solar-eclipses in a year in the 21-st century, except the years in which there are four (partial) eclipses in a year, this in promilles and the results are given below in a table. Left table are the values, right table are the years:

121-233-307-381	2001-2019-2037-2055
103-173-248-242	2002-2020-2038-2056
32- 38- 115-195	2003-2021-2039-2057
98-120-154-197	2004-2022-2040-2058
17- 20- 36 - 63	2005-2023-2041-2059
22- 8 - 7 - 21	2006-2024-2042-2060
53- 24- 7 - 6	2007-2025-2043-2061
126- 76- 34- 5	2008-2026-2044-2062
212-153-101- 59	2009-2027-2045-2063
297-216-158-105	2010-2028-2046-2064
(four partial eclipses)	2011-2029-2047-2065
111-175-250-329	2012-2030-2048-2066
58-111-175-246	2013-2031-2049-2067
91-126-176-233	2014-2032-2050-2068
155-180-192-190	2015-2033-2051-2069
72-104-124-130	2016-2034-2052-2070
21- 64- 95- 112	2017-2035-2053-2071
(four partial eclipses)	2018-2036-2054-2072

Please note: the both "Pb"-eclipses in the second half in this 21-st century have I not counted. You can easely see that the diffe-censes alternately increases and descreases in a certain rithm, can perhaps somebody of the readers of these text find something similar in other centuries? Or occurs this only in a very few centuries?

Than finally the fourth and also the last item of this text. In the SENL of 2004 March on pages 17 and 18 there was something about the begin of the solar eclipses saros series number 0 (zero). Now I saw on a web-page of Fred Espenak the MOON-eclipse saros-series number 31 (thirty-one) which have also a very strange and very rare begin: after starting with penumbral moon-eclipses as usually, there occurs THREE partial moon-eclipses in -1558, -1540 and -1522. Therefore and thereafter all moon-eclipses of these saros-series are ALL penumbral, and not earlier than about 150 years later on there occurs partial moon-eclipses in this series again! The URL is: http://sunearth.gsfc.nasa.gov/eclipse/LEsaros/LEsaros1-175.html

SETalk

Astronomy and Einstein

Date: Sat, 15 May 2004 From: "danielso" To: HASTRO-LSenl200406LISTSERV.WVU.EDU

Probably the most famous astronomical evidence was that presented by Eddington in 1919. Here is Cecilia Payne's account:

There was to be a lecture in the Great Hall of Trinity College. Professor [Arthur Stanley] Eddington was to announce the results of the eclipse expedition that he had led to Brazil in 1919. Four tickets for the lecture had been assigned to students at Newnham College and (almost by accident, for one of my friends was unable to go) a ticket fell to me. The Great Hall was crowded. The speaker was a slender, dark young man with a trick of looking away from his audience and a manner of complete detachment. He gave an outline of the Theory of Relativity in popular language, as none could do better than he. He described the Lorenz-Fitzgerald contraction, the Michelson-Morley experiment and its consequences. He led up to the shift of the stellar images near the Sun as predicted by Einstein and described his verification of the prediction. The result was a complete transformation of my world picture. I knew again the thunderclap that had come from the realization that all motion is relative. [from Cecilia Payne-Gaposchkin: An autobiography and other recollections (Cambridge, 1984).]

See also: http://www.esa.int/esaSC/SEM7I9R1VED_index_0.html
http://www.bun.kyoto-u.ac.jp/~suchii/Edd.on1919.html Dennis Danielson

From: "LARRY KLAES"

What are the list's thoughts on the possibility that Eddington fudged the data from the 1919 solar eclipse to match Einstein's theory?

http://www.simonsingh.net/1919_Eclipse.html<http://www.simonsingh.net/1919_Eclipse.html>

http://atheism.about.com/library/books/full/aafprEinsteinsLuck.htm<http://atheism.about.com/library/books/full/aafprEinsteinsLuck.htm>

From: "Ron Dwyer"

Thanks for the reply to my post, and I do appreciate the links provided-- the anniversary of the eclipse observations are coming up soon and I may post those links in my yahoo group. Other examples of astronomical phenomenon corroborating Einstein's physical theories are the perihelion of the planet Mercury; and black holes. Feedback is welcome. Best Regards, Ron Dwyer

From: skiffSenl200406BARD.EDU

Quoting Ron Dwyer <dwyer_ronSenl200406HOTMAIL.COM>:

One of the more notorious was the problematic red-shift from massive objects, that Freundlich thought he saw, but nobody else did - so St. John (and others) were skeptical of the 1919 announcement (See especially Overbye: "Einstein in Love", and Folsing's "Einstein") . Most, including Freundlich (who last tried in 1954), saw the actual corroboration in the Pound-Rebka experiment at Harvard in 1959 or 1960, where a mossbauer measurement of gamma ray recoil in Iron gave minutely different wavelengths at the top and bottom of Jefferson tower. Shapiro in his Venus radar delay experiments in the 50's (and later transmission delays from Voyager (I think))"confirmed" the time dilation near the solar limb. Gravitational waves are still under investigation, as you probably know (LIGO, et al.) Peter Skiff Bard College

From: "william.vanderburgh"

Besides the light-bending results, I would add the successful prediction of Mercury's motion. I suppose the Michelson-Morley experiment could be considered astronomical, since it depended on the Earth's motion throught the solar system. More recent results would include radar ranging of the planets, time delay of radio signals sent near the sun, the successful explanation of the decaying periods of binary pulsars, and soon (let's hope) confirmation of frame-dragging with Gravity Probe B.

(Continued on page 18)

SETalk

Two works come to mind as useful places to track down astronomical evidence for Relativity: Will, Clifford M. (1993). Theory and Experiment in Gravitation Physics. Revised edition (first edition 1981). Cambridge: Cambridge University Press. Brush, Stephen G. (1999). "Why was Relativity Accepted?" Physics in Perspective 1: 184-214.

For some limitations on the power of astronomical evidence to confirm General Relativity (or any theory of gravity applied to large scales) see my:

Vanderburgh, William L. (2003). "The Dark Matter Double Bind: Astrophysical Aspects of the Evidential Warrant for General Relativity," Philosophy of Science 70: 812-832. Bill Vanderburgh Department of Philosophy Wichita State University

From: "Owen Gingerich"

In connection with a recent question raised on the list, I am forwarding the following comment from an expert on Eddington's measurements. OWEN GINGERICH

There is no evidence that Eddington manipulated the data from the 1919 eclipse expedition. Correspondence between him and the Astronomer Royal make it clear that the analysis of the measurements was careful and honest. The decision to discard one of the data sets (which is usually cited by conspiracy theorists) was justified by optical problems, and was made by observers other than Eddington. In any case, copies of the photographs were sent to astronomers around the world, who made their own measurements and analyses that agreed with Eddington's. The folklore that he fudged the data seems to be a completely modern invention: none of his contemporaries voiced any concerns. The details of this, as well as the actual consequences of Eddington's anti-war stance, are discussed in my paper: "An Expedition to Heal the Wounds of War: 1919 Eclipse and Eddington as Quaker Adventurer," Isis, 2003, 94: 57-89. I would be happy to address any of these issues further via email. Matthew Stanley stanleySenl200406fas.harvard.edu

From: rplSenl200406UMICH.EDU

Heber Curtis harbored grave doubts, thanks to his own terrible experiences reducing the data from the Goldendale eclipse expedition. He did not even believe the very fine results Trumpler and Campbell obtained a few years later. There is a very important discussion of the matter in Jeffrey Crelinstein's dissertation. He also preferred the results Keivin Burns obtained for a solar gravitational red shift. This is one of the reasons Curtis found himself on the sidelines after 1925.

Prediction of the solar eclipse 1999-Aug-11

Date: Wed, 19 May 2004 From: "Franz Krojer" To: HASTRO-LSenl200406LISTSERV.WVU.EDU

Hi *****, in the book "Lehrbuch der Astronomischen Geographie" ("Textbook of Astronomical Geography"), Bielefeld and Leipzig 1909 (6th edition), from Eduard Wetzel and W. Mevius, I read at page 120:

"Die nächste ringförmige Sonnenfinsternis wird in Deutschland am 17. April 1912, die nächste totale am 7. Oktober 2135 stattfinden."

My English translation: "The next annular solar eclipse will be in Germany at 1912-Apr-17, the next total at 2135-Oct-7."

I wonder, why the total eclipse at 1999-Aug-11 was not predicted in this book. I would assume, that circa 1900 it was surely possible to predict the eclipse pathes and the magnitudes resp. totalities for some centuries rather exactly (with some uncertainties concerning Delta-T, but which should be roughly negligible for a time of hundred years). Or were circa 1900 such difficulties to calculate total solar eclipses for a future of some hundred years, so that some of the total eclipses and its pathes were overlooked? My opinion tends more to the view, that this missing prediction was a single mistake by the authors, but I am not sure.

Knows one of the list members, when the eclipse of 1999-Aug-11 was firstly predicted, especially in the sense and precision of "will be total in the south of Germany"?

Thanks -- Franz Krojer http://www.negation.info/differenz http://www.aryabhata.de

From: "Dr. B. Pfeiffer"

Dear all, I tried with GOOGLE the combination Oppolzer "canon of eclipses" 1999 and Oppolzer "Kanon der Finsternisse" 1999. Many web-pages on the August 1999 event cite Oppolzer"s work, without giving details. Noone stated that the eclipse was not predicted. I do not know how reliable were the prediction of the path. Regards Bernd Pfeiffer

From: "Axel Harvey"

Oppolzer's Canon was republished by Dover in the 1960s, someone must possess a copy (I'm still kicking myself for not having one).

Here is an intriguing indirect exhibit. I have an astrological manual, "Sphinx" (E.B. Walton), Planetosophy, vol. 2, 1960, with a map of total eclipses over Europe for the 20th century. The map is a bit too small and there are no borders, but the line of totality for the August 1999 eclipse seems to enter France along the spine of the

(Continued on page 19)

SETalk

(Continued from page 18)

Breton peninsula, cross Switzerland, touch the northern coast of the Adriatic, and continue through the Balkans. It misses the British Isles and Germany, and is generally south of the line in Espenak's Canon.

The reference given is "Flammarion - 'Popular Astronomy' 1897-1900". So some predictions at least must have placed this eclipse too far south.

From: "Owen Gingerich"

Oppolzer's diagrams are based on a three-point calculation, sunrise, midday, and sunset, and a circular arc connects them. The scale of the maps are too small to be sure, but it appears that the arc swing south of the British Isles and Germany. The midday point is placed at +18, +46 in the table, which is just south of Hungary. Owen Gingerich (translator of the 1962 Dover edition)

From: "Franz Kerschbaum"

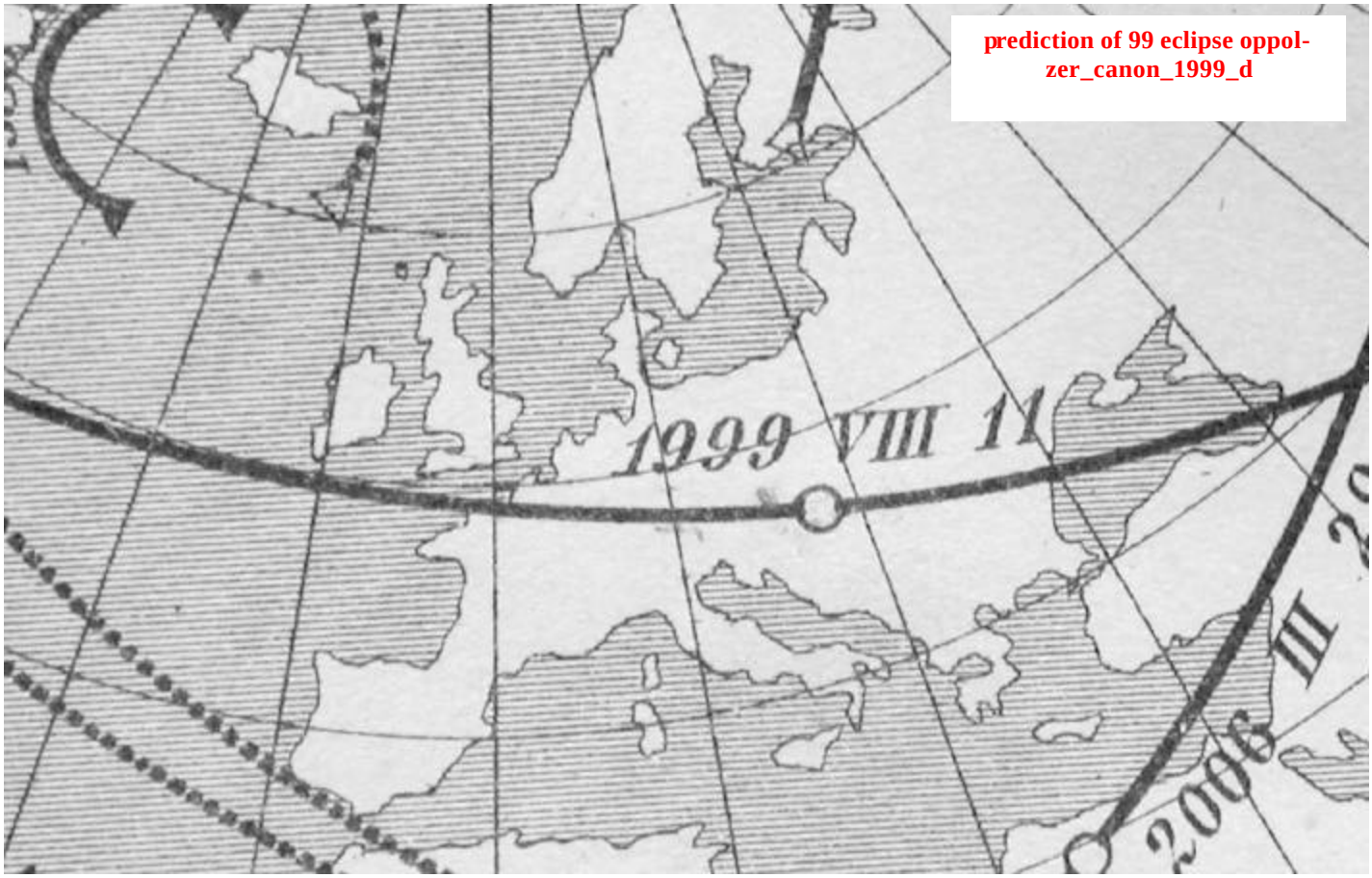
Dear collegues! To resolve that question I put two pictures out of Oppolzers Canon on the following pages:

The total page for 1999: http://www.astro.univie.ac.at/~fzi/files/oppolzer_canon_1999_t.jpg

Detail: http://www.astro.univie.ac.at/~fzi/files/oppolzer_canon_1999_d.jpg

I hope that helps. For me the path clearly crosses southern Germany and Austria.

All the best Franz Kerschbaum, Vienna University Observatory (Oppolzers working place...)



prediction of 99 eclipse oppol-zer_canon_1999_d

SETalk

Occultation on Venus by the Moon

From: "Jean-Paul GODARD" To: solARECLIPSES-Senl200406AULA.COM Date: Thu, 20 May 2004

European And North american observers may look at the tomorrow's occultation of Venus by the moon. This will happen during daytime, but may be worth a look. Cordiale-ment, Martine & Jean-Paul

From: "Geert Vandenbulcke"

And it certainly was worth the look, we observed the event under very good conditions in South France! Best regards, Geert Vandenbulcke, Maarten Vanleenhove, Luc Debeck, Dominieck Dierick, Jorg Versluys

From: "Arne Danielsen"

Please forgive me if this is completely off-topic, but here are a few images of what it looked like from Oslo, Norway;

http://astrophile.net/astronomy/astrophoto/planets/venus/Occultation_D60-5349.htm
http://astrophile.net/astronomy/astrophoto/planets/venus/Occultation_D60-5350.htm
http://astrophile.net/astronomy/astrophoto/planets/venus/Occultation_D60-5355.htm
http://astrophile.net/astronomy/astrophoto/planets/venus/Occultation_D60-5367.htm
http://astrophile.net/astronomy/astrophoto/planets/venus/Occultation_D60-5379.htm
http://astrophile.net/astronomy/astrophoto/planets/venus/Occultation_D60-5387.htm
http://astrophile.net/astronomy/astrophoto/planets/venus/Occultation_D60-5397.htm
http://astrophile.net/astronomy/astrophoto/planets/venus/Occultation_D60-5408.htm

Best regards, Arne

From: "Jean-Paul GODARD"

Thanks for sharing... JPG

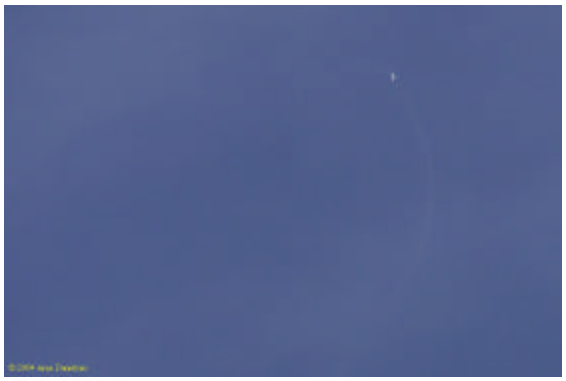
From: "Patrick Poitevin"

PLEASE NOTE, THAT OCCULTATIONS IS NOT A TOPIC FOR THE SOLAR ECLIPSE MAILING LIST. There are mailing list dedicated to occultations! Please do not misuse the SEML. Thank you.

Occultation_D60-5349

Occultation_D60-5355

Occultation_D60-5367



Occultation_D60-5387

SETalk








All pictures Jan Sladecek, Poland

SETalk

TRANSIT OF VENUS

Ancient views on Venus

Date: Tue, 4 May 2004 From: "Axel Harvey" To: HASTRO-LSenl200406LISTSERV.WVU.EDU

On Tue, 4 May 2004, Joan Griffith wrote: http://planetarynames.wr.usgs.gov/venus/venumons.html
>
> This U.S. government web site lists names of Venus in many North & South American and worldwide groups, as well as a lot of numerical data I do not comprehend.

Hi Joan! That list is a gazetteer of Venusian mountains (montes) which have been photographed or radar-ranged and then given names in a glorious fit of multiculturalism. I love the first one, Abeona, "Roman goddess of travellers" - sounds like the verb abeo ("I'm outa here!") with the female ending -na. Ah, the ease with which those Romans made gods... 'twould drive any atheist insane!

From: "Dr. B. Pfeiffer"

Dear Larry and all listmembers, some months ago I saw in german TV a documentary on Meso-America. Somewhere in the former Maya regions (I have forgotten the name of the town) they showed a bookshop full of literature on the end of the world in 2012. And to my utmost surprise, there are already now gathering freaks who intend to stay in the region until 2012. Let"s hope that the hype does not end as with the Haven"s Gate people. I therefore hesitate to spread esoteric texts as the above cited. Regards Bernd Pfeiffer

From: "Sepp Rothwangl"

Hi Bernd, Mayan 2012 is a similar phenomenon as as Xian 2000: The end of a calendrical period. That so many people drive crazy at such a moment seems to be the fact, that they do not differ time and time reckoning. 2012 is simply the end of 13th Baktun, such as AM 6000 the end of a Biblical 6th Day calculation or 2000 the end of precalculated Picean age.

But there cannot be any doubt that the end of such periods has an effect on cultures and world view. I would say people are going to orientate themselves new, just like a company after new year, when the balance sheet is stroke. Siucide is also in companies after a balance sometimes a happening practice. Sepp Rothwangl

J.P.A.Madden and Transit of Venus

From: "Wolfgang R. Dick" To: HASTRO-LSenl200406LISTSERV.WVU.EDU

Recently, a friend visited a cemetary in Versailles and found by chance the grave of Madden, John Patrick Auguste (1808-1889), which is decorated withsymbolic books bearing the titles of his writings, among these "Passage the Venus sur le Soleil". I found this book (Versaille 1875, 23 pp.) listed in Houzeau-Lancaster, vol. 1, p. 1352. However, non of the many library catalogues around the world searchable through the Karlsruhe Virtual Catalogue indicates a holding. Also the U.S. Naval Observatory Library does not have it. The only books by J.P.A.Madden which are listed are "Lettres d'un bibliographe" and "Catalogue d'une collection importante d'incunables ..." (e.g. in Library of Congress). The LoC indicates also the years of his birth and death. This means that a biography or an obituary should exist. The World Biographical Index has no entry for this Madden. Before going into less easily accessible sources: Does anyone know more about him and about any holding of his small book on the transit of Venus? Thanks in advance, Wolfgang Dick

From: "Wolfgang R. Dick"

Greetings,
>
> Wolfgang Dick wrote:
> >
> >Recently, a friend visited a cemetary in Versailles and found by chance the grave of Madden, John Patrick Auguste (1808-1889), which is decorated with symbolic books bearing the titles of his writings, among these "Passage the Venus sur le Soleil". I

(Continued on page 24)

(Continued from page 23)

found this book (Versaille 1875, 23 pp.) listed in Houzeau-Lancaster, vol. 1, p. 1352. However, non of the many library catalogues around the world searchable through the Karlsruhe Virtual Catalogue indicates a holding. Also the U.S. Naval Observatory Library does not have it. The only books by J.P.A.Madden which are listed are "Lettres d'un bibliographe" and "Catalogue d'une collection importante d'incunables
> >..." (e.g. in Library of Congress). The LoC indicates also the years of his birth and death. This means that a biography or an obituary should exist. The World Biographical Index has no entry for this Madden. Before going into less easily accessible sources: Does anyone know more about him and about any holding of his small book on the transit of Venus?

Well, the Bibliothèque nationale de France has:

Jean-Patrice-Auguste Madden, _Passage de Vénus sur le Soleil_. Versailles: Aubert, 1874. 23 pages.

Note: it's from Volume 11 of the _Mémoires de la Société des sciences naturelles et médicales de Seine-et-Oise_

The BNF holdings of Madden seem to be the sum total of Madden holdings known to the Catalogue Collectif de France. Jean-Louis Trudel

Venus Transit 2004 and the Important Role of Amateur Astronomers

Date: Mon, 10 May 2004 From: "LARRY KLAES" To: HASTRO-LSenl200406LISTSERV.WVU.EDU

Original Message - From: esonewsSenl200406eso.org<mailto:esonewsSenl200406eso.org> To: ljk4Senl200406msn.com<mailto:ljk4Senl200406msn.com> Sent: Monday, May 10, 2004 2:38 PM Subject: Venus Transit 2004 and the Important Role of Amateur Astronomers

Dear subscribers, The international VT-2004 public educational programme around the Venus Transit on June 8th continues to gain momentum. The latest communication includes news about Observations of Venus; VT-2004 Amateur Astronomers' Meeting in Brandys (Czech Republic); New Material at the VT-2004 website; VT-2004 Final Event to be held in Paris.

The full text of VT-2004 Press Communication 03 (May 10, 2004), with one photo and all weblinks, is available at:

http://www.vt-2004.org/Media/vt-comm-03.html<http://www.vt-2004.org/Media/vt-comm-03.html> Kind regards, The ESO EPR Dept.

SIC Transits of Venus website

Date: Mon, 10 May 2004 From: "stephen johnston" To: HASTRO-LSenl200406LISTSERV.WVU.EDU

We are pleased to announce the launch of a new website on the Transits of Venus at http://transits.mhs.ox.ac.uk. The core of the site is a browsable database of historical instruments and images from collections around the world. Institutions and individuals are invited to develop the site by contributing their own material.

Currently the site displays material from:
- Museo della Specola, Università di Bologna
- Collection of Historical Scientific Instruments, Harvard University
- Museum of the History of Science, University of Oxford
- National Museum of American History, Washington
- Mathematisch-Physikalischer Salon, Dresden
- UK Particle Physics and Astronomy Research Council

To take part in this international collaboration, visit the Contributors section of the site. Material is submitted directly online for instant access on the web. The site is an initiative of the Scientific Instrument Commission (SIC) of the International Union of the History and Philosophy of Science. It was developed at the University of Oxford and is hosted by the Museum of the History of Science. Stephen Johnston Sara Schechner Steven Turner

TRANSIT OF VENUS

Venus Transit in Florence

From: "Mark Friedman" To: "Solar Eclipse Mailing List" Date: Tue, 11 May 2004

I will be in Florence Italy on June 8 and would like to hook up with others for observing the transit of Venus. I attempted to contact the Arcetri Astrophysical Observatory by email but never received a reply. I contacted TravelQuest which will have a tour group at the observatory for the transit but was told that they would not allow anyone outside their group join them for observing. Does anyone know of of an astronomy club in the Florence area? Anyone on the SEML going to be in area for the transit? Mark Friedman

Venus transit, SENL

From: "Friedhelm Dorst" To: "Patrick Poitevin" Date: Sat, 15 May 2004

Glenn - Your suggestion to use the moon as a photometer for the detection of the Venus transit for those who are on the night side of the earth during the transit looks fascinating at a first glance. The actual circumstances (phase of the moon, apparent solar brightness loss) will not allow an easy evaluation of the photometry since the obscuration caused by Venus will be less than 1/1,000 and even lesser when limb darkening of the sun is taken seriously. The latter is lesser in the red part of the spectrum. More important, of course, is the hourly brightness loss of the moon due to phase change : during the ingress as well as during the egress of Venus, which takes some 20 minutes, the phase-related brightness loss of the moon will be more than 4/1,000 during those 20 minutes. If all of this amount should be to be attributed to the magnitude of the lunar phase meaning that no phase effect would exist, then every part of the illuminated lunar surface (Aristarchus, e.g.) could serve as "photometer", but the phase effect is dominating the brightness change of the moon at any substantial phase. Ironically Aristarchus is close to its local noon and so it should pose not too much phase effect. I would thus not advise to make use of the moon. My idea for the hemisphere where the transit is visible is the following one:

Take a white flat surface mounted perpendicular to the telescope axis and a digital camera with more than 10 bit colour depth at constant orientation to the white surface and make a sequence of say 1 exposure per minute from 1 hour before 1st contact until 1 hour past last contact. The photometric curve will very probably exhibit no dip caused by the transit, but when extrapolating the curve of 1 hour long before transit and the curve of 1 hour past transit both towards transit, then these extrapolations should clearly not match the transit part of the curve and its both extrapolations beyond transit.

I do not have the instrumental means to perform my idea but I would suggest to find somebody to realize such an attempt. Freddy

From: "Glenn Schneider"

Hi Freddy, I completely agree that as a differential photometric experiment detecting Venus in transit across the Sun in light reflected by the Moon would be problematic at best because of the systematics you note and other complicating factors. However, I think you misunderstood my intentions, and that is not the experiment I will be doing. The Venus transit provides a wonderful opportunity, to serve as a surrogate to test/validate the various methods and techniques which are under development or consideration for future space-based missions to detect and characterize extrasolar transiting planets. The "problem" of course is that from Earth, Venus and the Sun are all too well resolved, whereas extrasolar planets and their host stars will be unresolved and we will detect only their bulk combined signals.

By observing the Venus transit in light scattered (not, technically reflected) by the lunar surface, the "problem" of the Sun/Venus being spatially resolved is solved, as the scattered light signal at every point observed on the lunar surface area integrates the total sunlight. But, still, photometry is not on the agenda - differential spectroscopy is, which is what I proposed and what I will be doing. The idea is to look for a change in the full-disk area-integrated solar spectrum as a result of Venus covering part of the photosphere.

There are two effects which one can hope to see. First, because of preferential absorption in the Venusian atmosphere (of backlit sunlight) by specific molecular, but also atomic allotropic species, one can attempt to see that absorption. This is best done in the near infrared of course, where broad molecular absorption bands due to C02 are prevalent and dominant. However, the precision to which differential spectroscopic measures can indeed be made do not rule out the detection of absorption by allotropes of Sulfur in the optical (and perhaps other species), which exist high in the Venus atmosphere above the haze layer - but whose optical depth is

(Continued on page 26)

TRANSIT OF VENUS

(Continued from page 25)
uncertain.

Even though the total absorption through the annulus of the Venus atmosphere is very small (much smaller than the photometrically occulted area), the "in transit" and "out of transit" spectra can be compared with high enough precision (photon S/N is not the dominant error) and such detections are not out of reach. (The particular spectrograph I will be using on the 2.3 meter Bok telescope has a 4 arcminute long slit and the 512-square pixel detector can be read out every 4 seconds. I'll have the slit half on the moon - perpendicular to a particular chosen point on the surface - and half on the adjacent sky).

A second effect one can hope to see - with high resolution (atomic line) spectroscopy is a Rossiter effect. This, actually, may be easier to detect. Because of solar rotation the portion of the solar photosphere which is approaching the Earth (most quickly near the limb) has it spectrum blue shifted, and of course near the receding limb, redshifted. When Venus occults part of the approaching part of the photosphere, the bulk solar spectrum is ever so slightly differentially redshifted, and in fact the line profiles are affected. This too is a subtle effect, but indeed is detectable. That said Jay Pasachoff and I WILL be looking for a bulk radiometric decline - but not using lunar reflectance spectroscopy, but directly using ACRIM III data from the ACRIMSAT orbital solar radiometer (0.2 - 2 micron active cavity radiometer). This is well within its radiometric precision, though it monitors the Sun usually on much monger timescales.

Whatever we can actually see - or not - the game is afoot! Cheers, -GS-

Transit of Venus Symposium (1 June - Utrecht)

Date: Tue, 18 May 2004 From: "Gent van R.H." To: HASTRO-LSenl200406LISTSERV.WVU.EDU

Listmembers in or near Utrecht (The Netherlands) on Tuesday 1 June (exactly one week before the Venus Transit) may be interested in attending a half-day symposium on the approaching Transit of Venus.

Papers will be given in Dutch and in English. For more information on the symposium, see http://www.venusvoordezon.nl/symposium/

Venus Returns for Its Shining Hour

Date: Tue, 18 May 2004 From: "LARRY KLAES" To: HASTRO-LSenl200406LISTSERV.WVU.EDU

May 18, 2004 By WARREN E. LEARY

The world is about to witness a rare spectacle that once launched expeditions to ideal vantage points around the globe and inspired millions of people to venture outside and stare at the heavens.

On June 8, people in the right places on Earth will be able to see Venus move across the face of the Sun in a kind of minieclipse that is visible twice every century or so. The last such occurrence, called a transit of Venus, was in 1882. It inspired an international effort to use the event to answer one of the most pressing scientific questions of the day: What is the exact distance between the Sun and Earth?

Although studies of the event failed to provide an exact answer, they did narrow the range of estimates and measurements, and ushered in an era of investing in science as a symbol of national prestige. For the last event, the United States government mustered eight expeditions to make observations around the world, partly because Britain, France, Russia and other rivals did the same.

By bouncing radar signals off the Sun and Venus and using spacecraft measurements, scientists in the 1960's calculated that the average Sun-to-Earth distance is 92,955,859 miles, a measure called the astronomical unit.

Scientists realized for centuries that if they could find out that number, they could use the formulas of the 17th-century astronomer Johannes Kepler to calculate the size of the solar system and the exact distances between the planets.

"This was the most important question of its day in astronomy," said Dr. Jay M. Pasachoff, a professor of astronomy at Williams College. "And using the transits of Venus to calculate the astronomical unit was the best way to do it."

(Continued on page 27)

TRANSIT OF VENUS

(Continued from page 26)

Although transits of Venus have occurred for thousands of years, the first report of its subtle crossing of the Sun was in 1639. The transits occur when the orbits of Venus, Earth and the Sun put them into alignment along the same plane.

Since 1639, transits have occurred in 1761, 1769, 1874 and 1882. If someone misses the one next month, there will be another opportunity on June 6, 2012. After that, more than a century will pass before the next transits, in 2117 and 2125. Because of its rarity, the transit next month, best viewed from Europe and the Mideast, is generating great scientific and public interest, said Dr. Steven J. Dick, chief historian for the National Aeronautics and Space Administration. Dr. Dick has written extensively on the 18th- and 19th-century transits.

No one alive today saw the last transit, he said, and seeing the next two will be the only chance most people have.

"These are truly once-in-a-lifetime events," Dr. Dick said. "Although the scientific importance has diminished, I think there will be a lot of interest this time among the public, based on e-mail I've seen from around the world."

Dr. David DeVorkin, curator of the history of astronomy at the National Air and Space Museum, said the 1874 and 1882 transits were prominently featured in newspapers and magazines. A carnival atmosphere pervaded Wall Street for the transit on Dec. 6, 1882, with people crowding the area and staring up through smoked glass.

"It was a popular diversion," Dr. DeVorkin said. "Something maybe everybody didn't try to see, but everybody talked about it."

Scientific interest persists. Instruments aboard at least three Sun-watching satellites, as well as ground telescopes, will follow the event. Researchers will use Venus' trek to test techniques and instruments that can be used to detect planets in other solar systems.

More than 120 extrasolar planets have been discovered orbiting other stars, most of them huge bodies found because their gravity affected the motion of their stars.

Astronomers have recently detected a small number of far planets by measuring the fluctuations that they cause in light from the stars they circle. In 2007, NASA plans to launch the Kepler spacecraft to monitor Sun-like stars in hope of detecting Earth-size planets through small decreases in star brightness.

Although denied a direct view of the transit because it occurs at night in the American West, astronomers with the University of Arizona hope to get an indirect view. Dr. Glenn H. Schneider said he and a colleague, Paul S. Smith, will try to use the Steward Observatory in Tucson to measure about a half-hour of sunlight from the end of the transit as it reflects off the Moon.

"We want to see if we can detect the signature of Venus' atmosphere spectroscopically from sunlight reflecting off the moon, as if it was a reading coming from a faraway star," Dr. Schneider said.

The transits generally occur in a predictable pattern of two occurring in an eight-year period, followed by one 105 1/2 years later and another eight years after that. After an additional 121 1/2 years, the pattern repeats. The paired eight-year sightings occur because a Venusian year equals 224.7 Earth days, making 13 Venusian years equal to eight Earth years.

That allows the planets to return to about the same alignment with the Sun they had been in eight years earlier, after which they go out of sync for more than a century.

On Tuesday, June 8, observers lucky enough to view the entire transit will see Venus as a small black spot crossing the southern hemisphere of the Sun from left to right. The planet, entering the disc of the Sun at the 8 o'clock position, will take six hours to cross the bright face before exiting at the 5 o'clock position.

Venus, appearing as a round black dot with a diameter one thirty-second of the Sun's, is widely expected to cause a one-tenth of 1 percent drop in sunlight that reaches Earth during the event.

(Continued on page 28)

TRANSIT OF VENUS

(Continued from page 27)

Location is everything, particularly when trying to witness celestial events. The entire transit will be visible in Europe, most of Africa, the Mideast and most of Asia. The unlucky regions of the globe where the event occurs at night, and is unviewable, include western North America, including most of the United States west of the Rockies; southern Chile and Argentina; Hawaii; and New Zealand.

Some regions will see just part of the transit, because the Sun sets while it is in progress. Those areas include Australia, Indonesia, Japan, the Philippines, Korea and Southeast Asia.

Likewise, the Sun rises with the transit in progress over eastern North America, the Caribbean, western Africa and most of South America, allowing observers a brief view before the event ends. How much early risers see will depend on the weather and how high the Sun rises above the horizons before Venus moves out of view.

In New York, sunrise will be at 5:25 a.m., and Venus is to begin exiting the solar disc at 7:06, when the Sun is 17 degrees above the horizon. The planet's final contact with the edge of the Sun should occur at 7:26 a.m., when the Sun is 20 degrees high. Times are similar for most cities in the Eastern time zone and one hour earlier in the Central time zone. But moving West means that the Sun is lower on the horizon.

Modern interest in planetary transits can be traced from Kepler. Based on his calculations of planetary motion, he wrote in 1627 that Mercury would cross the face of the Sun in November 1631 and that Venus would follow on Dec. 6 that year. Kepler suggested that observers placed at widely different points on Earth could indirectly calculate the distance to the Sun by using Venus.

Knowing the distance between observers and the different angles from which they viewed the transit, astronomers could calculate the distance to Venus and use that to compute the Earth-to-Sun measurement, he reasoned.

Kepler died the year before the 1631 Venus transit, but he would not have seen it had he lived, because it occurred at night in Europe. He would have also missed the next transit, in 1639, because he made a miscalculation that failed to predict it.

Fortunately, a young English astronomer, Jeremiah Horrocks, became interested in Kepler's work and, in recalculating some of the German's tables, discovered that a transit would occur on Nov. 24, 1639. Horrocks witnessed part of the transit from his home in Much Hoole, Lancashire, and a friend whom he notified by letter, William Crabtree, saw it from Manchester.

The next transits, in the 18th century, drew much more attention, thanks to Edmond Halley, the British astronomer best known for the comet that bears his name. Halley suggested using the 1761 and 1769 transits to calculate the Sun-to-Earth distance by having observers time the events from widely spaced latitudes and trace the planet's path across the Sun's face as they saw it from their positions. By measuring the angular shifts of the paths based on the timings, Halley reasoned, the astronomical unit could be calculated.

Although Halley died in 1742, his plan guided many observations made of the two transits from around the world. But the results varied widely and were disappointing. Among those trying to work on the problem in 1769 was the British explorer Capt. James Cook, who took his ship, the Endeavour, on its first voyage to the South Pacific to observe the transit from Tahiti.

Cook and others were frustrated in their observations by the inability to time the exact moment when the edges of the planet and the Sun appeared to touch. When Venus nears the edge of the disc of the Sun, its black circle appears to ooze toward the edge of the sun without showing a clear point of contact. Although the precise second of contact was needed for calculations, this so-called "black drop" phenomenon caused observers watching the same event to disagree by several seconds up to a minute on when the outer edges touched.

Cook and other observers speculated that the problem was the distortion of light through the Venusian atmosphere.

Earlier this year, using spacecraft observations, Dr. Pasachoff and other scientists concluded that the black drop effect was caused by a combination of images' blurring in small-aperture telescopes and the natural dimming of sunlight near the Sun's visible edge.

In the 19th-century transits, scientists tried to overcome that effect and other imperfections with better telescopes and the introduction of photography. Still measuring and timing transits never led to finding the precise Sun-to-Earth distance.

(Continued on page 29)

(Continued from page 28)

William Harkness of the United States Naval Observatory refined results from the 1882 transits and in 1894 came up with an astronomical unit measure of 92,797,000 miles. But the work of another Naval Observatory scientist, Simon Newcomb, was adopted as the world standard at a 1896 meeting in Paris, Dr. Dick said. Newcomb, who gave little credence to transit data, combined values from several sources including speed-of-light star readings, to come up with a figure of about 92,872,000 miles. Both were close to the modern value of 92,955,859 miles, but precision is critical in astronomical terms.

Nevertheless, Dr. Dick said, the transits of Venus remain important because the desire to define the astronomical unit - and to maintain or gain scientific prestige - led many nations to mount competing expeditions. In 1874, Russian sent out 26 expeditions, Britain 12, the United States 8, Germany and France 6 each, Italy 3 and the Netherlands 1.

"You could compare it with the space race in the 20th century," he said.

http://www.nytimes.com/2004/05/18/science/space/18VENU.html?ex=1085888225&ei=1&en=476ab731897cf4bf<http://www.nytimes.com/2004/05/18/science/space/18VENU.html?ex=1085888225&ei=1&en=476ab731897cf4bf>

May meeting of the British Astronomical Association

Date: Wed, 19 May 2004 From: "BAA mailing list"

==========
BAA electronic circular No. 00148 http://www.britastro.org/
==========

The next meeting of the British Astronomical Association

Date:Wednesday 26th May 2004

The Geological Society, Burlington House, Piccadilly, London Doors open at 17:00

Programme:

"Historical Transits of Venus" Peter Hingley, Librarian, Royal Astronomical Society
Martin Mobberley's Sky Notes
"Henry McEwen of Glasgow" Richard McKim, Director, Mars Section, BAA

All welcome. No charge for attendance. Tea available

Nick Hewitt Meetings Secretary

Beating the Black Drop: A Proposal

Date: Thu, 20 May 2004 From: "James Huddle" To: solareclipsesSenl200406aula.com

Dear Solar Eclipse Enthusiasts, As I mentioned in an earlier note (Please see Ref. 1 below), I've come up with a variation of Halley's experiment to measure the astronomical unit that avoids problems arising from the Black Drop effect. Jay Pasachoff suggested (Ref. 2) that I test the method using data from the 7 May 2003 transit of Mercury. I have done this, and would like to ask for volunteers to do this experiment during the transit of Venus next month. The only data required are data that many people will collect anyway, and, since no data are required during ingress or egress, collaborators will be free to study those phenomena as they wish. Of course, I will acknowledge all contributions appropriately.

I have put a detailed description of this experiment on my web site (Ref 3). It is too long for e-mail, but here is an abstract, including a description of the data required, for those who would like to participate. Please feel free to forward this to anyone.

Beating the Black Drop: A Proposal James R. Huddle, huddleSenl200406usna.edu Physics Department, U. S. Naval Academy An-

(Continued on page 30)

TRANSIT OF VENUS

(Continued from page 29)
napolis, MD 21402, USA

Abstract: I propose a variation of Halley's method to measure the astronomical unit that avoids the complications of the Black Drop effect, and I request collaborators to test the method during the transit of Venus on 8 June 2004. The data required are data that many observers are already planning to collect, and all contributions will be acknowledged appropriately. If you would like to participate, a complete data set will consist of a series of 15 to 20 photographs of Venus in transit across the Sun, along with the time at which each photo was recorded and the geographic coordinates of the observing station. Photographs of Venus's ingress and egress are not required. One photo should be taken about every fifteen minutes while Venus is on the face of the sun. It is not necessary that the interval be exactly fifteen minutes, as long as the time at which each picture is taken is recorded to the nearest second. It is not necessary that the clock be set accurately to Universal Time or any other standard, only that it keep reasonably accurate time intervals during the six hours of the transit. Any decent wristwatch will do. Since the time displayed on the screens of some GPS units can differ from the actual time by up to several seconds, GPS should not be used for this purpose. If a few photos are missing due to weather or error, a data set will be useable if it contains at least 15 good shots. The photographs must be clear enough to allow enlargement so that the Sun's diameter is about 15 cm, or 6 inches, and must show Venus's silhouette clearly. The entire Sun must be in the field of view. The coordinates of the observing station should be measured by GPS, if possible. It is best to record several GPS readings over a period of several hours.

In the proposal on my web site, I give a brief historical context, then descriptions of Halley's method and of my proposed variation. I also describe how I tested the method as Pasachoff suggested, and end with a brief discussion.

I plan to take a set of data at Luxor, Egypt. It would be helpful to have data sets from several other locations, and I hope many of you will participate. I plan to write a paper for American Journal of Physics, and will gladly acknowledge all contributions. Please direct questions to me at huddleSenl200406usna.edu.

REFERENCES

1. James R. Huddle, SENL Vol. 8, No. 10, p.13, October 2003; archived at http://www.mreclipse.com/SENL/SENLinde.htm/

2. Jay Pasachoff, SENL Vol. 8, No. 10, p 14, October 2003.

3. http://usna.edu/Users/physics/huddle Click on "Beating the Black Drop")

Jim Huddle

Transit of Venus from Istanbul

From: AlcovedbaseSenl200406aol.com Date: Thu, 20 May 2004 To: SOLARECLIPSESSenl200406aula.com

Dear Friends, My wife and I will be traveling to Istanbul, Turkey this weekend. Our family and friends think that our main purpose is to visit them. My workmates think that I am eager to attend that important business meeting over there. Fortunately, we have a more celestial reason to go to Istanbul: to view the first once-in-a-lifetime transit of Venus, of course! We haven't yet decided whether to join our professional colleagues or to set up our scopes in a park or somewhere alike to share the views with the general public. With a probability of 2% overcast skies (please see Fred's NASA website for weather prospects) Istanbul seems to be the center of the universe for June 8th! If you happen to be in the vicinity and would like to join our small expedition, feel free to contact me off list. We'll be delighted to share this event with you too. I'll post our pictures on our website when we return home to Boston.

Wishing clear skies to all adventurers! Haldun I. Menali Boston, MA http://members.aol.com/astroalcove/index.html

Transit of Venus Festival

Date: Fri, 21 May 2004 From: "Sara Schechner" To: HASTRO-LSenl200406LISTSERV.WVU.EDU

(Continued on page 31)

TRANSIT OF VENUS

(Continued from page 30)

The Collection of Historical Scientific Instruments, Harvard University invites you to join us for a

Festival of the Transit of Venus 8 June 2004 5:00 am - 7:30 am

Science Center, Harvard University 1 Oxford Street, Cambridge, MA

Observe this rare Astronomical Spectacle! Celebrate its History! Enjoy live Transit of Venus Music!

No one alive has seen a Transit of Venus, but on June 8th you will have this rare opportunity!

Transits of Venus are rare astronomical alignments in which the planet Venus crosses the face of the Sun as seen from Earth. They occur in pairs (8 years apart) separated at intervals of 105.5 or 121.5 years. In 1639 Jeremiah Horrocks and his friend William Crabtree were the first and only witnesses of a transit of Venus. Before the next transits in 1761 and 1769, astronomical expeditions were sent around the globe in order to observe the event from far flung places and share their results. Their goal was nothing less than determining the dimensions of the solar system, one of the great unsolved problems of astronomy of the time. The transits of Venus also caused a great stir among the public. Crowds watched them through smoked glasses in city streets and sang drinking songs about them in taverns. The next pair of transits--in 1874 and 1882--also caused great excitement.

In 1761 the only observers in North America were Harvard's own John Winthrop, the Hollis Professor of Mathematics and Natural Philosophy and his two students. Because the event could not be seen from Cambridge, they sailed to St. John's, Newfoundland, taking college apparatus behind enemy lines during the French and Indian War in the name of international collaboration in science.

After a failed attempt to put together an expedition to Lake Superior in 1769, John Winthrop observed the next transit of Venus from Harvard Yard in Cambridge. He used new instruments acquired in London with the help of Benjamin Franklin and had to overcome obstacles arising from the rebellious political acts of Samuel Adams and others with whom he sympathized. The Harvard Collection of Historical Scientific Instruments has all the instruments used by Winthrop in 1769, and some from 1761 as well.

Now its your turn! Come relive the excitement of the 1760s and make history on June 8, 2004. Join us between 5:00 am and 7:30 am for these activities:

Astronomy!
5:09 am--sunrise with Transit of Venus in progress Observe Venus on the Sun with modern telescopes and safe solar filters Re-enact John Winthrop's observations in 1769 with his instruments! View observations of the transit in Africa, Europe, and around the globe via live webcasts
7:06 am--Venus contacts the inner edge of the sun's disk
7:26 am--Venus leaves Sun

History! Visit the CHSI museum galleries to see apparatus selected by Benjamin Franklin for Winthrop's observations. Learn about pre-Revolutionary politics and its impact on Harvard's expeditions to observe the Transit in 1761 and 1769, with curator Sara Schechner.

Transit of Venus Music! Live performances of John Philip Sousa's "Transit of Venus March" by the Harvard Band and "The Venus Waltz" for banjo by John Huth, chairman of the Physics Department

Food! Continental breakfast

For further information, please contact Sara Schechner at schechnSenl200406fas.harvard.edu or 617-495-2779.

Trekking on Planet's Trail

Date: Sat, 22 May 2004 From: "Sepp Rothwangl" To: "Patrick Poitevin"

(Continued on page 32)

TRANSIT OF VENUS

(Continued from page 31)

OFF LIST! Dear Patrick, I want to let you know that we celebrate the 5th anniversary of the Great "Euroasian" eclipse of August 99. Here my recent Flashmail about it:

Flashmail#3: Trekking on Planet's Trail, Venus Transit, A Summernightsdream-Party

Dear friend of CALENdeRsign! Some events are waiting for us:

****

WALK on PLANET-TRAIL "HEAVEN ON EARTH" in Styria/Austria "Faster than light from Pluto down to Earth"

Date: Saturday 5 June, CEP 245000. Meeting point: 2 pm (14:00) at Taxi at star-pavilion Rettenegg

Program: From 5th June it will be exactly 245.000 days until the day of vernal equinox in 671 years when the planets are aligned again in conjunction, just like on May 5th, 2000, and as they are arranged in a line on the Planet Trail, HEAVEN ON EARTH. Such a planetary alignment was also decisive for creating of the AD-Count in the 6th Century. The Planet Trail thus is not only a spatial model but also a monument that captures a temporal planetary conjunction, which has been significant to mankind for mythic ages. Pls see: http://www.calendersign.ric.at/en/planettrail/

****

Our walk shall also tune in to the transit of Planet Venus three days after: On 8th June the planet Venus will pass across the face of Sun.

VENUS TRANSIT: 8th June!

Noone alive has experienced this phenomenon, because the last such event was 122 years ago. The first observation of the passage of planet Venus in front of the Sun, the only one in the entire West, was by 20-year-old English amateur astronomer Jeremiah Horrocks, who improved the planet data of Kepler, and thus was able to see the tiny black disk of Venus on the face of the Sun. He described it with impressive words, and wrote repeating "Think, think what this means!"

In fact, the observation of the Venus transit was, and still is a legendary event. From antiquity it was used as proof for the geocentric and biblical world model. Because such a transit of a lower planet never could be observed.

Horrocks experienced it with his very own eyes and proved the truth of the heliocentric model, as established at end of medieval age by Giordano Bruno, Nicolaus Copernicus and Galileo Galilei, but formulated already earlier, about 250 BCE by Aristarchos of Samos.

In the following years after Horrocks' observation, "transit of Venus" expeditions were organized around the world in order to measure with a large as possible paralaxis the distances of the planets and of the solar system. Still today we can be sure that new scientific discoveries will come out of the upcoming transit. You should not miss seeing this transit (ATTENTION! SPECIAL SOLAR FILTER OR ECLIPSE GLASSES MUST BE USED!)

We will meet at our historic church building at Georgiberg in Kindberg.

****

There is another date which I want you to mark in your calendar:

With great desire I look forward to the anniversary of the great European total solar eclipse of 1999. I am planning on this special day a summertime party with friends to which I would like to invite you:

During the "SUMMERNIGHTSDREAM" I shall UNVEIL a new CALENDAR MONUMENT and we shall cheer the IGNITION of "AION".

(Continued on page 33)

TRANSIT OF VENUS

(Continued from page 32)

Location: At my own forest in the Mürzvalley. It is the Zellerspitz, 1320 m above sea level, with wonderful views. Once there were three "weather-crosses", which rotted long ago, and near these once were celebrated legendary feasts. The location is aligned with the ritual landscape survey around Lucifer's Rock. This place shall not be forgotten, but have a revival. Close to it is the central line of the 1999 eclipse, and last year I saw there a fascinating Aurora.

Date: On late afternoon and evening on the day of the divine herald Mercury, Wednesday, 11th August 004, CEP 244933. 5th anniversary of the total solar eclipse of 1999. It is the day when the Sun, in its annual path along the zodiac, crosses the boundary into the constellation Leo.

Program: *Unveiling a monument made of triangular stones like Pythogorean Triangles, representing and coding old and modern calendrical periods.

*Ignition of "AION": a wooden life-size model of a winged lion, representing LEO will be set on fire. This reflects the beast of the apocalypse "stepping his foot out of the Sea and roaring like a lion", the symbol of the new era, which is caused by the shift (precession) of the equinoxes against the constellations.

*Visitors are invited to wear Shakespearean costumeso, such as in his play, A Midsummer Night's Dream, and take part in rehearsing the dialog, epilog, where it reads:

THESEUS Say, what have you for this evening? What masque? what music? How shall we beguile The lazy time, if not with some delight?
...
* * *
THESEUS I wonder if the lion be to speak.

DEMETRIUS No wonder, my lord: one lion may, when many asses do.

THESEUS Moonshine and Lion are left to bury the dead. DEMETRIUS Ay, and Wall too. BOTTOM [Starting up] No assure you; the wall is down that parted their fathers. Will it please you to see the epilogue, or to hear a dance between two of our company?
...
* * *
PUCK Now the hungry lion roars, And the wolf behowls the moon; Whilst the heavy ploughman snores, ...

Of course we would appreciate hearing your suggestions for this event! If you will join us, pls email me, because we want to be prepared!

Until the next time! Yours Sepp Rothwangl

EMA 71

From: "Wolfgang R. Dick" Date: Sat, 22 May 2004

ELEKTRONISCHE MITTEILUNGEN ZUR ASTRONOMIEGESCHICHTE Herausgegeben vom Arbeitskreis Astronomiegeschichte in der Astronomischen Gesellschaft Nr. 71, 22. Mai 2004 Redaktion: Wolfgang R. Dick und Hilmar W. Duerbeck

Inhalt

1. ICHA Newsletters

2. SIC Transits of Venus website

3. Symposium: Venus voor de Zon

(Continued on page 34)

(Continued from page 33)

4. Festival of the Transit of Venus

5. "Chasing Venus" exhibition and lecture series at the Smithsonian

6. The New Astronomy - A Meeting to Honor Woody Sullivan on his 60th Birthday

7. VITRUM - exhibition on ancient glass and science

8. Ausstellung in Altenburg

9. Ausstellung in Berlin

10. Ausstellungen in Sondershausen und Gotha

Danksagung

Impressum

.....
Item 1 EMA Nr. 71, 22. Mai 2004
.....

ICHA Newsletters

The Newsletters of the Inter-Union Commission for History of Astronomy (ICHA) are now available online in PDF format at http://www.astrohist.org/iaucomm41/news/ . The latest issue is No. 6, April 2004.

Unfortunately, it is no longer possible to send hardcopies of the newsletters to ICHA members.

Contents of No. 6, April 2004:
A. Sydney and Beyond, by C. L. N. Ruggles
B. Minutes of the General Business Meeting held in Sydney 2003 by S. Dick
C. Minutes of the Meeting of the Organising Committee of C41/ICHA by C. L. N. Ruggles
D. Status of the Inter-Union Commission for History of Astronomy (ICHA)
E. Information: The acceptance of new members into IAU at Sydney by A. Gurshtein
F. Memorandum: Concerning the Acceptance of New Members into the Inter-Union Commission on History of Astronomy (ICHA) by A. Gurshtein and F. R. Stephenson
G. Procedures for Admitting non-IAU Members to the ICHA
H. History Programme at Sydney
I. General Information about the Working Groups
J. The IAU Historical Instruments Working Group; 1: Progress Report 2003-04
K. The IAU Astronomical Archives Working Group; 2: Progress Report
L. The IAU Transits Of Venus Working Group; 3: Progress Report
M. The IAU Historic Radio Astronomy Working Group; 1: Progress Report
N. The Struve Geodetic Arc (Press Release) by J. R. Smith
O. Earth Dial - a new project: Mars landers create opportunity for Web-linked sundials around the world (Press Release) by W. T. Sullivan
P. Journals and Publications:
- Archaeoastronomy. The Journal of Astronomy in Culture, by C. McCluskey
- Rittenhouse (Astronomical Papers), by R. Brooks
- Contributions on history of geophysics and cosmical physics
- Books 2000/2003
- Some research papers by C41/ICHA members - 2001/2003

(Continued on page 35)

TRANSIT OF VENUS

(Continued from page 34)

Q. News:
- A new book: Astronomical instruments and archives from the Asia-Pacific region, by D. A. King
- Astronomy in the Baghdad of the Caliphs, by D. A. King
- Doggett Prize, by R. Brashear
- The New Astronomy: Opening the Electromagnetic Window and Expanding our View of Planet Earth, by W. Orchiston
- Scientific Instrument Collections in the University by F. Manasek, R. Kremer, D. Pantalony, S. Schechner
- The European Scientist - Symposium on the era and work of Franz Xaver von Zach (1754 - 1832)
- The Fifth International Conference on Oriental Astronomy by K.-Y. Chen
- European Society for the History of Science, by S. Dupouy
- Sharing the celestial sphere: A conference under the joint auspices of IAU and IUHPS/DHS, by R. Kochhar
- History of Astronomy Displays and Exhibitions Chasing Venus : Observing the Transits of Venus, 1631-2004
- Obituaries: Simeon Ya. Braude, by G. Tsarevsky and Bernard Cohen, by E. Mendelsohn and G. Smith

.....
Item 2 EMA Nr. 71, 22. Mai 2004
.....

SIC Transits of Venus website

We are pleased to announce the launch of a new website on the Transits of Venus at http://transits.mhs.ox.ac.uk.

The core of the site is a browsable database of historical instruments and images from collections around the world. Institutions and individuals are invited to develop the site by contributing their own material.

Currently the site displays material from:
- Museo della Specola, Universita di Bologna
- Collection of Historical Scientific Instruments, Harvard University
- Museum of the History of Science, University of Oxford
- National Museum of American History, Washington
- Mathematisch-Physikalischer Salon, Dresden
- UK Particle Physics and Astronomy Research Council

To take part in this international collaboration, visit the Contributors section of the site. Material is submitted directly online for instant access on the web.

The site is an initiative of the Scientific Instrument Commission of the International Union of the History and Philosophy of Science. It was developed at the University of Oxford and is hosted by the Museum of the History of Science.

Stephen Johnston, Sara Schechner, Steven Turner

[Source: Stephen Johnston to HASTRO-L, the History of Astronomy Dicussion Group, 10 May 2004]

.....
Item 3 EMA Nr. 71, 22. Mai 2004
.....

Symposium: Venus voor de Zon

On the eve of the first transit of Venus in front of the Sun since 121 1/2 years, the University of Utrecht organizes an afternoon Symposium about the background of these special astronomical events and their role in the history of science.

Date: Tuesday, June 1, 2004
Place: Museum Sterrenwacht Sonnenborgh (Utrecht)

(Continued on page 36)

TRANSIT OF VENUS

(Continued from page 35)
Audience: interested public, students, science journalists

Programme:

12:30-13:00 Introduction, coffee and tea

13:00-13:30 Robert Wielinga: Wat is een Venusovergang

13:30-14:00 Albert van Helden: The Venus Transits of 1761 and 1769

14:00-14:30 Rob van Gent: Waarnemingen van de Venusovergangen van 1761 & 1769 in Batavia (Nederlands Indie)

14:30-15:00 Jessica Ratcliff: Astronomical Photography and the 1874 Transit of Venus

15:00-15:30 Break (coffee and tea)

15:30-16:00 Klaus Staubermann & Rob van Gent: Rondleiding bij de Venusovergang tentoonstelling in Museum Sterrenwacht Sonnenborgh

16:00-16:30 Hilmar Duerbeck: The German Transit of Venus Expeditions of 1874 and 1882

16:30-17:00 Frans Snik: Van 'Black Drop' naar 'Bright Points': Waarnemingen van de Venusovergang met de Dutch Open Telescope op La Palma

17:00-18:00 Closing

Abstracts of the papers are available at http://www.venusvoordezon.nl/symposium/ .

Participants of the symposium are kindly requested to register at the Museum Sterrenwacht Sonnenborgh (tel. 030-2302818) or by informing infoSenl200406sonnenborgh.nl .

Organizers: Universiteitsmuseum Utrecht (http://www.museum.uu.nl/) Museum Sterrenwacht Sonnenborgh (http://www.sonnenborgh.nl/) Instituut voor de Geschiedenis en Grondslagen van de Wiskunde en de Natuurwetenschappen (http://www.phys.uu.nl/~wwwgrnsl/)

.....

Item 4 EMA Nr. 71, 22. Mai 2004

.....

Festival of the Transit of Venus

The Collection of Historical Scientific Instruments, Harvard University invites you to join us for a

Festival of the Transit of Venus

8 June 2004 5:00 am - 7:30 am

Science Center, Harvard University 1 Oxford Street, Camb ridge, MA

Observe this rare Astronomical Spectacle! Celebrate its History! Enjoy live Transit of Venus Music!

No one alive has seen a Transit of Venus, but on June 8th you will have this rare opportunity!

Transits of Venus are rare astronomical alignments in which the planet Venus crosses the face of the Sun as seen from Earth. They

(Continued on page 37)

TRANSIT OF VENUS

(Continued from page 36)

occur in pairs (8 years apart) separated at intervals of 105.5 or 121.5 years. In 1639 Jeremiah Horrocks and his friend William Crabtree were the first and only witnesses of a transit of Venus. Before the next transits in 1761 and 1769, astronomical expeditions were sent around the globe in order to observe the event from far flung places and share their results. Their goal was nothing less than determining the dimensions of the solar system, one of the great unsolved problems of astronomy of the time. The transits of Venus also caused a great stir among the public. Crowds watched them through smoked glasses in city streets and sang drinking songs about them in taverns. The next pair of transits--in 1874 and 1882--also caused great excitement.

In 1761 the only observers in North America were Harvard's own John Winthrop, the Hollis Professor of Mathematics and Natural Philosophy and his two students. Because the event could not be seen from Cambridge, they sailed to St. John's, Newfoundland, taking college apparatus behind enemy lines during the French and Indian War in the name of international collaboration in science.

After a failed attempt to put together an expedition to Lake Superior in 1769, John Winthrop observed the next transit of Venus from Harvard Yard in Cambridge. He used new instruments acquired in London with the help of Benjamin Franklin and had to overcome obstacles arising from the rebellious political acts of Samuel Adams and others with whom he sympathized. The Harvard Collection of Historical Scientific Instruments has all the instruments used by Winthrop in 1769, and some from 1761 as well.

Now its your turn! Come relive the excitement of the 1760s and make history on June 8, 2004. Join us between 5:00 am and 7:30 am for these activities:

Astronomy!
5:09 am--sunrise with Transit of Venus in progress Observe Venus on the Sun with modern telescopes and safe solar filters Re-enact John Winthrop's observations in 1769 with his instruments! View observations of the transit in Africa, Europe, and around the globe via live webcasts
7:06 am--Venus contacts the inner edge of the sun's disk
7:26 am--Venus leaves Sun

History! Visit the CHSI museum galleries to see apparatus selected by Benjamin Franklin for Winthrop's observations. Learn about pre-Revolutionary politics and its impact on Harvard's expeditions to observe the Transit in 1761 and 1769, with curator Sara Schechner.

Transit of Venus Music! Live performances of John Philip Sousa's "Transit of Venus March" by the Harvard Band and "The Venus Waltz" for banjo by John Huth, chairman of the Physics Department

Food! Continental breakfast

For further information, please contact Sara Schechner at schechnSenl200406fas.harvard.edu or 617-495-2779.

[Source: Sara Schechner to HASTRO-L and Rete discussion groups, 21 May 2004]

.....
Item 5 EMA Nr. 71, 22. Mai 2004
.....

"Chasing Venus" exhibition and lecture series at the Smithsonian
---

The Smithsonian Institution Libraries is pleased to announce the opening of its current exhibition, "Chasing Venus: Observing the Transits of Venus, 1631-2004", at the Libraries' Exhibition Gallery located in the National Museum of American History, 14th & Constitution Ave. NW, Washington D.C. "Chasing Venus" will tell the story of the transits of Venus using the marvelous illustrations in the rich collection of rare books from the Smithsonian Libraries, supplemented by appropriate artifacts from the National Museum of American History and the United States Naval Observatory.

(Continued on page 38)

TRANSIT OF VENUS

(Continued from page 37)

A series of five (5) noontime public lectures is scheduled to commence on April 8.

Ronald Brashear Curator, "Chasing Venus: Observing the Transits of Venus, 1631-2004" Head, Special Collections and Dibner Library, Smithsonian Institution Libraries

Chasing Venus Lecture Series Lectures start at 12:00 noon -- FREE and open to the public Leonard Carmichael Auditorium National Museum of American History, Behring Center

Presented in conjunction with the Smithsonian Institution Libraries exhibition "Chasing Venus: Observing the Transits of Venus, 1631-2004" March 24, 2004 - April 3, 2005 For more information go to: www.sil.si.edu/exhibitions/chasing-venus

Lecture Series funding provided by NASA Office of Space Science

Thursday, April 8, 2004 "The First Observation of a Transit of Venus: Jeremiah Horrocks and the New Astronomy" Wilbur Applebaum, Professor Emeritus, Humanities Dept., Illinois Institute of Technology, Chicago, Illinois

Thursday, April 22, 2004 "Endeavour's Wake: Captain Cook and the Transit of Venus" Richard Fisher, Director, Sun-Earth Connection Division, NASA Office of Space Science, Washington, D.C.

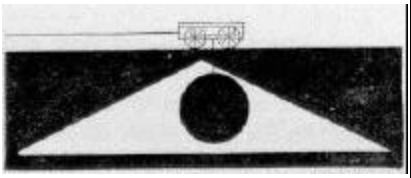
Thursday, May 6, 2004 "Transits of Venus and the American Expeditions of 1874 and 1882" Steven J. Dick, NASA Chief Historian, National Aeronautics and Space Administration, Washington, D.C.

Thursday, May 20, 2004 "Transits of Mercury and Venus and the Solution of the Black-Drop Mystery" Jay M. Pasachoff, Director of Hopkins Observatory and Field Memorial Professor of Astronomy, Williams College, Williamstown, Massachusetts

Thursday, June 3, 2004 "Public Reaction to the Transit of Venus, 1882" David DeVorkin, Curator of History of Astronomy, National Air and Space Museum, Smithsonian Institution, Washington, D.C.

[Source: Ronald Brashear to HASTRO-L, 1 April 2004]

The 1882 Transit of Venus



Date: Sat, 22 May 2004 From: "LARRY KLAES" To: HASTRO-LSenl200406LISTSERV.WVU.EDU

The 1882 Transit of Venus: Observations from Wellington, South Africa.

http://canopus.saao.ac.za/%7Ewpk/tov1882/tovwell.html<http://canopus.saaoac.za/~wpk/tov1882/tovwell.html>

The 1882 Transit of Venus Prof Newcomb s Popular Astronomy simulate

The 1882 Transit of Venus 1874 expedition tovgroup

TRANSIT OF VENUS

8 juni : Venus schuift voor de zon (persbericht)

From: "Carl Koppeschaar" To: VenusovergangSenl200406astronet.nl Date: Fri, 21 May 2004

Persbericht 8 juni 2004: Venus schuift voor de zon

Aftellen voor zeldzame Venusovergang

Op dinsdagochtend 8 juni schuift voor het eerst in 122 jaar de planeet Venus als een grote zwarte stip voor de zon. Zo'n 'Venusovergang' is een buitengewoon zeldzaam hemelverschijnsel. Niemand die nu leeft heeft ooit zo'n mini-zonsverduistering door Venus gezien.

Op de website Venusvoordezon.nl zal het evenement live te volgen zijn, onder andere via de webcam van de Nederlandse zonnetelescoop op La Palma. Elke bezoeker kan bovendien interactief meedoen aan een unieke meting om de afstand tot de zon op te meten. 'Venusvoordezon' is een nationaal initiatief van diverse sterrenkundige organisaties en de informatieve website Kennislink.

In Nederland en België begint het verschijnsel om 07.19 uur als aan de zonsrand linksonder (ruwweg in '7-uurspositie') een piepklein indeukinkje aan de zonsrand is te zien. Dat deukje wordt in twintig minuten langzaam groter, totdat omstreeks 07.39 uur een volledige zwarte stip tegen de zon afsteekt. Het donkere silhouet van Venus trekt steeds verder over de zonneschijf. Om 10.22 uur is de kortste afstand ten opzichte van het middelpunt van de zon bereikt. Daarna vervolgt de donkere stip zijn weg naar de zonsrand 'rechtsonder' (ruwweg in '16-uurspositie'). Om 13.03 uur kleeft zij aan de zonsrand. Twintig minuten later is Venus van de zonneschijf verdwenen.

Venus is ongeveer even groot als de aarde en staat op het moment dat zij tussen onze planeet en de zon door trekt ook het dichtstbij. Op 8 juni bedraagt de afstand van Venus 'slechts' 43 miljoen kilometer. De schijnbare diameter van Venus is daardoor ook het grootst en bedraagt iets meer dan 3 procent van die van de zonneschijf.

Eclipsbrilletje

"Het donkere silhouet van Venus is zo groot, dat de 'minizonsverduistering' met het blote oog is te volgen," vertelt Carl Koppeschaar, hoofdredacteur van de informatieve website Kennislink en een van de initiatiefnemers van de speciale website www.venusvoordezon.nl. "Maar wie het verschijnsel wil waarnemen, heeft op z'n minst een 'officieel' eclipsbrilletje nodig om er geen ernstig oogletsel aan over te houden! Het licht van het omringende deel van de zon blijft namelijk even fel. Net als op iedere andere dag kan langdurig staren naar de zon dus levenslange blindheid veroorzaken! Op de website is daarom, naast algemene informatie over het verschijnsel, veel aandacht voor beschermingsmaatregelen en wordt ook verwezen naar volkssterrenwachten en science centra waar de Venusovergang veilig en onder deskundige begeleiding kan worden waargenomen."

Venusexpedities

Vroeger maakten astronomen verre reizen om Venusovergangen waar te nemen. Door vanaf de meest afgelegen plaatsen op aarde metingen te verrichten, konden zij voor het eerst de afstanden in ons zonnestelsel berekenen. De vier contacttijden (de tijdstippen waarop Venus precies raakt aan de rand van de zonneschijf) verschillen namelijk voor elke plek op aarde. Dit komt doordat vanuit elke plaats op aarde de baan van Venus op een andere manier op de zon geprojecteerd wordt.

Juist dit effect kan op een slimme manier gebruikt worden om de Astronomische Eenheid (= gemiddelde afstand van de aarde tot de zon) te bepalen. Hiervoor is slechts een precieze meting van de contacttijden nodig op twee plaatsen die het liefst ver van elkaar afliggen. Zulke metingen waren de belangrijkste en meest omvangrijke die astronomen in de achttiende en negentiende eeuw uitvoerden. Legendarisch zijn de Venusexpedities van de Franse sterrenkundige Le Gentil naar India (1761 en 1769) en van de Britse kapitein James Cook naar de Stille Zuidzee (1769). In de negentiende eeuw bleef ook Nederland niet achter. In 1874 reisde een groep astronomen af naar het eiland Réunion in de Indische Oceaan. De waarnemingen vielen door bewolking echter grotendeels in het water, zodat deze Nederlandse expeditie een teleurstellend resultaat opleverde. Nederlandse waarnemingen van de Venusovergang van 1882 in Curaçao en Belgische waarnemingen in Chili waren daarentegen wel succesvol.

Unieke meting via internet

(Continued on page 40)

TRANSIT OF VENUS

(Continued from page 39)

Doordat Venus en de aarde slechts zelden in één lijn met de zon staan, zijn er in totaal tot nu toe slechts vijf overgangen (in 1639, 1761, 1769, 1874 en 1882) actief door de mensheid waargenomen. Met behulp van radar kan de Astronomische Eenheid tegenwoordig veel nauwkeuriger worden bepaald dan met een Venusovergang mogelijk is. Tegenwoordig hoeven dus geen grote expedities meer te worden ondernomen. Maar de overgang van 8 juni 2004 biedt echter een zeer grote hoeveelheid mensen over de hele wereld de unieke mogelijkheid om op een leuke en makkelijke manier de schaal van ons zonnestelsel opnieuw op te meten.

"Dankzij internet is het fenomeen wereldwijd live te volgen," vervolgt Koppeschaar. "Op Venusvoordezon.nl tonen we live webcasts vanuit de hele wereld, met name vanaf de 'Dutch Open Telescope', een Nederlandse zonnetelescoop op La Palma. We kunnen razendsnel van continent naar continent schakelen om scholieren en andere belangstellenden met elkaar in contact te brengen. Zij kunnen hun waarnemingen dan via een 'on line calculator' verbinden om zo gezamenlijk de afstand van de aarde tot de zon uit te laten rekenen. Voor Nederlandse en Vlaamse scholieren die met hun klas de beste waarneming verrichten, stellen we enkele prijzen beschikbaar."

Waarnemingen van de Venusovergang dragen weliswaar niet meer bij aan een nauwkeuriger afstandsbepaling, wél zijn er nog enkele onbegrepen effecten waarover astronomen meer zouden willen weten. Zo treedt op het moment dat Venus de binnenste rand van de zon raakt het 'zwarte druppeleffect' op. Nog ongeveer een minuut nadat Venus moet zijn losgekomen of voordat zij de zonsrand raakt, 'kleeft' de planeet al als een soort uitgerekte druppel vast aan de zonsrand. Dit verschijnsel werd wel toegeschreven aan het feit dat Venus een atmosfeer heeft. Maar het lijkt eerder te maken te hebben met waarneming door een telescoop en het feit dat de rand van de zon donkerder is dan het midden van de zonneschijf.

Een ander bijzonder effect is het 'aureool' dat rond de zwarte stip te zien kan zijn als zij de zonneschijf deels raakt of aan het verlaten ls. Dat wordt veroorzaakt door zonlicht dat door de dikke Venusatmosfeer word afgebogen en zo als een ring om de planeet straalt. Het was de waarneming van deze lichtring aan de hand waarvan de Russische astronoom Mikhail Lomonósov in 1761 concludeerde dat Venus een dampkring heeft.

De eerstvolgende Venusovergang vindt plaats op 6 juni 2012, maar is slechts zeer gedeeltelijk in Nederland en België te zien. Daarna duurt het tot 11 december 2117 en 8 december 2125 voordat weer een reeks Venusovergangen zal zijn te zien.

Unieke samenwerking

Venusvoordezon.nl is een unieke samenwerking tussen de informatieve website Kennislink (www.kennislink.nl), de Nederlandse Onderzoekschool voor Astronomie (NOVA), Museum Sterrenwacht Sonnenborgh, Volkssterrenwacht Copernicus in Haarlem, de Dutch Open Telescope (DOT) op de Canarische Eilanden, Steven van Roode van het Newman College in Breda, het Universiteitsmuseum Utrecht, Volkssterrenwacht Mira in Grimbergen (België), website Astronet en de Europese Zuidelijke Sterrenwacht (ESO). De website bevat naast uitgebreide achtergrondinformatie en de on line calculator ook waarneemtips, veiligheidsinstructies en een uitgebreide activiteitenagenda.

Noot (niet bestemd voor publicatie)

Voor meer informatie over de activiteiten rond de Venusovergang kunt u contact opnemen met de volgende personen:

Carl Koppeschaar, hoofdredacteur Kennislink en woordvoerder van Venusvoordezon.nl, mob. 06-20621593, e-mail: carl.koppeschaarSenl200406kennislink.nl

Arnout Jaspers, Nederlandse Onderzoekschool voor Astronomie (NOVA), tel. 020-5257480, mob. 06-53327812, e-mail: ajaspersSenl200406science.uva.nl

Hans Albers, Volkssterrenwacht Copernicus, mob. 06-20354667, e-mail: f.j.albersSenl200406hccnet.nl

Robert Wielinga, Museum Sterrenwacht Sonnenborgh, tel. 030-2302818, e-mail: r.p.wielingaSenl200406sonnenborgh.nl

TRANSIT OF VENUS

When has and will Venus pass BEHIND the Sun?

Date: Sat, 22 May 2004 From: "LARRY KLAES" To: HASTRO-LSenl200406LISTSERV.WVU.EDU

With all the hoopla about the Venus Transit on June 8, I am wondering how often and when the second planet from the Sun has and will pass BEHIND our yellow dwarf G2 class star as seen from Earth, and has anyone witnessed that event? Plus, what science could be gained from this? Larry

From: "Tony Beresford"

At 03:37 23/05/04, Larry Klaes wrote: >With all the hoopla about the Venus Transit on June 8, I am wondering how often and when the second planet from the Sun has and will pass BEHIND our yellow dwarf G2 class star as seen from Earth, and has anyone witnessed that event? Plus, what science could be gained from this?

The Superior conjunctions table in Jean Meus's lists the occultations around current date Larry. Last was 11 June 200, and not suprisingly next will be 8 years later 9 June 2008. This sequence started in 1976, it pets out around 2040. Another set of occultatations near the other node of the Venusian orbit starts in 2089.

Cant think this event can be observed. The observed time dilation of radar echoes from Venus at superior conjunction couldnt be done with the Sun actually in the beam I would have thought. Tony Beresford

From: "Dr. B. Pfeiffer"

Dear Tony, Larry and the others!

The radar reflection experiments to test general relativity were proposed by Irwin I. Shapiro in an article in Phys. Rev. Lett. 13 (1964) 789. A first successful experiment was performed with the MIT Haystack radar in 1968 at a superior conjunction of Mercury. (They used the "small" Haystack radar instead of the Arecibo facility because of the high frequency of the first one which minimized the disturbing influence of the Solar corona.) Another experiment was done at the superior conjuntion of Venus on Jan. 25, 1970. Better results were obtained with radio signals emitted by the Viking obiters and landers at the superior conjunction of mars Nov, 26, 1976.

It should be noted that radar echos with Venus in inferior conjunction showed that the astronomical unit derived from optical measurements as Venus transits had been inaccurate. Regards Bernd Pfeiffer

From: "Joe Kress"

Disregarding natural eclipses as unlikely to occur at the 'right' moment and being too swift (about 7 minutes max) to boot, superior Venus occultations could only be observed from an satellite having a small disk to produce an artificial eclipse. Of course, the solar corona would then prevent observations of entry and exit (of the artificial disk, not the photosphere itself) unless it was near the minimum of the sunspot cycle, and the observer was lucky. Joe Kress

James Cook and the Transit of Venus

Date: Fri, 28 May 2004 From: "LARRY KLAES" To: HASTRO-L@LISTSERV.WVU.EDU

Original Message -- From: "NASA Science News" <snglist@snglist.msfc.nasa.gov> To: "NASA Science News" <snglist@snglist.msfc.nasa.gov> Sent: Friday, May 28, 2004 2:12 AM Subject: James Cook and the Transit of Venus

> NASA Science News for May 28, 2004
>
> The coming transit of Venus, on June 8, 2004, will be one of the best-publicized events in the history of astronomy. Yet the sight of Venus' disk crawling across the Sun might strike some as ... dull. Read this story and learn the real reason to watch.
>
> FULL STORY at
>

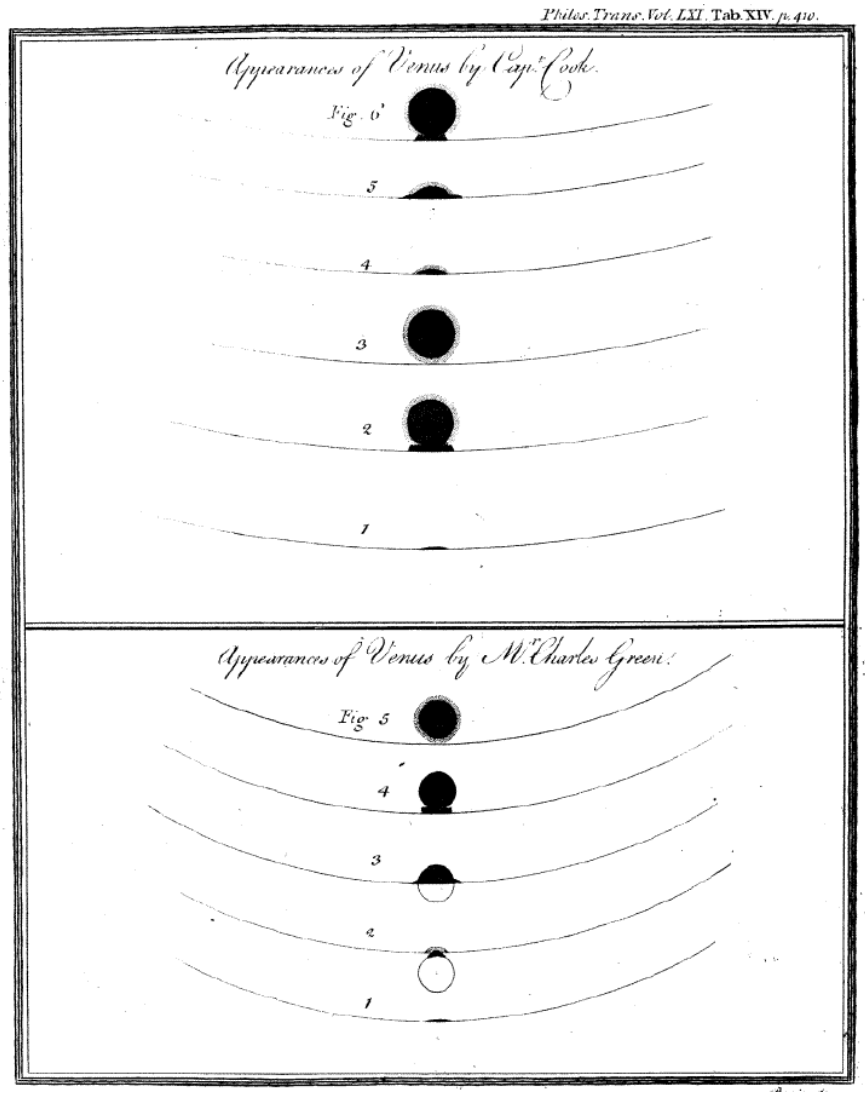
TRANSIT OF VENUS

(Continued from page 41)

> http://science.nasa.gov/headlines/y2004/28may_cook.htm?list662745
>
> Science@NASA stories are available in Spanish at our sister site, Ciencia@NASA <http://ciencia.nasa.gov/>. This is a free service. Home page: http://science.nasa.gov

James cook and the transit of venus endeav-our1_med

james cook and the transit of ve-nus ptvenus_med



james cook and the transit of ve-nus cook_med

james cook and the transit of venus TRANSIT2

Joanne & Patrick

The sole Newsletter dedicated to Solar Eclipses

WE'RE ON THE WEB AT
http://www.Mr.Eclipse.com/SENL/SENLinde.htm
and
http://solareclipsewebpages.users.btopenworld.com

THE SOLAR ECLIPSE NEWSLETTER IS A MONTHLY NEWSLETTER ABOUT SOLAR ECLIPSES EDITED BY JOANNE & PATRICK POITEVIN. FINANCIAL SUPPORT FROM THE RAINBOW SYMPHONY.

THE ELECTRONIC VERSION OF THE SOLAR ECLIPSE NEWSLETTER IS AVAILABLE ON THE WEB PAGE OF FRED ESPENAK.

THE SOLAR ECLIPSE NEWSLETTER IS FREE OF CHARGE, BUT IS NOT AVAILABLE IN HARD COPY.

TSE 2006

2006 TSE maximum duration

Date: Wed, 05 May 2004 To: SOLARECLIP-SESSenl200406aula.com From: "Sheridan Williams"

Can Fred Espenak or anyone else tell me where the longest actual duration will be for the 2006TSE? I am aware that maximum duration is highly dependent on the lunar limb profile. Can this be predicted this early or is this something hat has to wait until nearer the time? Best wishes

Libya / Egypt: Recce Visit 30 May - 4 June

Date: Wed, 26 May 2004 From: "Peter Tiedt" To: SOLARECLIP-SESSenl200406AULA.COM

TSE 2006 March 29 John Addison of Wild Frontiers and I will be visiting Cairo, Benghazi, and the Libyan Desert south of Benghazi and south of Jalu Oasis over the period 30 May to 4 June. Main objective is to confirm locations and arrangements for the 2006 March 29 TSE, for which WF has 45% of the maximum 100 pax booked and confirmed.

We have a tight schedule, but may be able to accommodate requests for recce items in the areas listed.

Please post requests "on list" to avoid duplications.

Report back will be via the SEML after the visit (but before end June). Peter Tiedt

SUBSCRIBING TO THE SOLAR ECLIPSE MAILING LIST

The Solar Eclipse Mailing List

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

solareclipsewebpages@btopenworld.com

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

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

You can send an email 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 email messages that other subscribers send to the listserver. Only subscribers can send messages.

HOW TO SUBSCRIBE:

IN THE BODY OF THE MESSAGE TO listserv@Aula.com SUBSCRIBE SOLARECLIPSES name, country.