

SOLAR ECLIPSE NEWSLETTER

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Solar Eclipse Mailing List

Dear Eclipse Chasers

We are now in a good shape and the newsletter is nice and on time. The upheavals of moving are now far behind us, although my studies still limit my time availability for the newsletter.

As we will not be travelling to the next annular eclipse we depend on lots of reports from you guys, please let us know how it goes in December. We know for sure that we will make the annular next year and the total, our only limitations are holiday allowances. Leading to the point that the NASA report from Fred and Jay is now available, and we know that Fred has been busy these last weeks with distribution.

and hopefully start writing some articles soon. I would love some book reviews from the readers, so if anyone has any please send in.

There is a update on the newsletter progress post eclipse, and we have a birthday next month, the newsletter is five years old. No happy birthday messages please, it will drive Patrick wild.

However, we hope that you find the mailing list beneficial and of good quality. Please help Patrick to maintain that quality, by only sending eclipse related messages.

Best regards and take care

Patrick & Joanne

The Solar Eclipse Mailing List

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

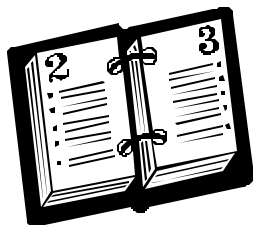
Thanks to the voluntary efforts of Jan Van Gestel of Geel, Belgium, the Solar Eclipse Mailing List (listserver) has been in operation since 10 December 1997. This is the first mailing list devoted solely to topic of solar eclipses on the internet.

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

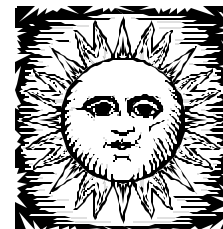
Patrick is nearly up to date with the backlog of newsletters and now has some time to research for the calendar,



ECLIPSE CALENDAR



OCTOBER 2001



Dear All,

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

October 02, 1853 Death of Dominique Francois Jean Arago (1786-1853), French astronomer. Studied solar eclipse of July 08, 1842 and concluded it exist of gas. (ref. DD 9/98, Rc 1999)

October 02, 1959 At the New England eclipse of October 2, 1959, Dr. E. H. Land, inventor of the Polaroid Land camera, had accompanied Harvard astronomers on a DC-6 plane that flew above the heavy overcast. On this flight, Dr. Land and his colleagues secured several excellent photographs of the corona, using Polaroid cameras with telephoto lenses. (ref. S&T 4/1961p193).

October 02, 1978 Partial Solar Eclipse. A small scientific group under the guidance of R. Gulyaev had used the Partial Eclipse for cinematographic observation of occultation of individual chromosphere spicules by the Moon. Observes have been carried out using the large Lyot-type coronagraph (lens diameter is 53 cm, equivalent focal length is 18 meters) at the Tien Shan coronal station near Alma-Ata. The brightness distributions across spicules were first derived. (ref. personal mail RG)

October 03, 1986 The shortest possible duration of a total solar eclips may be a fraction of a second. The solar eclipse of October 3, 1986 was annular along most of the central track, but was total for about a tenth of a second over a restricted area in the North Atlantic Ocean. Eight observers saw this eclipse total from a plane. Some one did <see> this eclipse and was NOT on that plane. Russel D. Eberst <observed> the eclipse around Edinburgh in Scotland. He wrote: The evening of October 3, 1986 was quite clear and so observations of artificial satelites could be done. When the first satelite of that evening was observed, 1985-82A or Kosmos 1682, it seemed to be fainter in magnitude then expected. In the first instance, it was considered as the position of the satelite, in its long axis directed to me. But when the second and the following artificial satelites were appeared, the all looked unusual faint. They all looked if they would enter the shadow of the earth and where 1 1/2 magnitude less then expected. By a sudden, I realised their was a solar eclipse partial in the United Kingdom, and the satelites whom still <saw> the sun, would experience a partial solar eclipse. Calculating the magnitude corresponding to the sun, it would be about a 75 percent eclipse. Parently, I saw an eclipse, which was theoreticly not visible in Great Britain. ref. Zenit Feb 1987.

October 04, 0590 Quote from Historia Francorum by Gregory of Tours (ca 539 ED - ca 594), bishop of Tours: ... There was an Earthquake on the eighteenth day before the Kalends (note June 14) of the fifth month, being the fourth day (of the week), early in the morning when dawn was coming. The sun was eclipsed in the middle of the eight month and its light was so diminished that it scarely gave as much light as the horns of the moon on the fifth day. ... The eight month is October (Octo is the Latin for eight) but it can be even the eclipse of 13 October AD 581 which was about the same magnitude (0.66) at Tours. (ref. ENB 9/1998)

October 04, 1582 Switch over to the Gregorian calendar and cut 10 days from the calendar. Gregory's Decree promulgating the Reform directed that the day 4 Oct., 1582, should be followed by the day 15 Oct., 1582. Not all the Catholic countries, and not all the Protestant ones, switched precisely at that time. Ref. PP/TS-9/97

October 05, 1931 2359 Debehogne 1931 TV. Minor Planet discovered 1931, October 5 by K. Reinmuth at Heidelberg. Named in honor of Henri Debehogne, astronomer at the Royal Observatory in Uccle. Noted for his astrometric work on comets and minor planets. He also did some experiments on astrometry at eclipses.

October 06, 1241 "In this same year, namely 1241 from the Incarnation, on the 6th day from the beginning of October, on Sun-

(Continued on page 3)

ECLIPSE CALENDAR

day, the Sun was again eclipsed and all the air was darkened. There was great terror among everyone, just as in that eclipse which happened three years previously, as we have attested above." Refers to a solar eclipse in Split of 6 October 1241. From: Thomaë Historia Pontificum Salonitanorum et Spalatinorum. Quoted in Historical Eclipses and Earth's Rotation, by F Richard Stephenson, Cambridge University Press, 1997, page 401.

October 06, 1990 Launch of Ulysses (ESA) with STS-41 Discovery. Orbit around Jupiter to research sunpoles. Initially called International Solar Polar Mission (ISPM). There were 5 astronauts in STS-41 and the flight took only 4 days. (ref. DD 10/98)

October 07, 2135 Next total solar eclipse in the Netherlands. Totality is in the north part of Holland. Utrecht will have a magnitude of 0.965. The eclipse of May 25, 2142 will be total in the Netherlands, south of the line Rotterdam-Zwolle, and including a large part of Belgium.

October 09, -0424 (425 BC) "On the first Mercury rises. On the third the Equinox. Night of the 15th 40 minutes after sunset, an eclipse of the moon begins. On the 28th occurs an eclipse of the sun." Inscriptions on a clay tablet, part of an ancient Chaldean astronomical almanac. The dates quoted are Chaldean. Some sources date these two eclipses to 9 (4) October 425 BC and 23 (18) October 425 BC. Ref. Eclipse Quotations Espenak's Webpages.

October 09, -0424 (425 BC) "And the moon in haste eclipsed her, and the Sun in anger swore He would curl his wick within him and give light to you no more." Said to refer to a lunar eclipse of 425 BC, and an annular solar eclipse of 424 BC. Aristophanes (Greek, c450-385 BC) Chorus of Clouds (423BC) Ref. Eclipse Quotations Espenak's Webpages.

October 09, 1873 Birth of Karl Schwarzschild, German astronomer. Explained the fading at the edge of the sun in 1906. Died with health weakness due to World War I. (ref. DD 10/98)

October 10, 1962 Mariner 2 (US) discovered solar wind. Was on its way to Venus. (ref. DD 10/98)

October 12, 1605 "Wendelin at Forcalquier in Provence saw the whole Sun hidden apart from a very narrow thread towards the north, which ascribed to the illuminated atmosphere." Refers to a solar eclipse at Forcalquier, France, of 12 October 1605. From: Riccioli. Quoted in Historical Eclipses and Earth's Rotation, by F Richard Stephenson, Cambridge University Press, 1997, page 421. Wendelin (also Vendelinus - on the moon, or official name Wendelen Govaart) was born in Herk-de-Stad, Belgium, the same town as where PP was born. In 1980 PP co-organized the Year of Wendelen in Herk-de-stad to celebrate his 400th birthday.

October 12, 1605 This occurrence of saros 137 was observable from London with a m.901 shortly after noon. Preceding this by 15 days, on the evening of Sep 27 a Partial Lunar Eclipse was also observable from London. It is these two Eclipses that most authorities believe Shakespeare refers to in Act I, scene ii, lines 112-113 of King Lear when the Earl of Gloucester despairing of the coming disorder attributes it to "these late Eclipse in the Sun and Moon portend no good to us.." In the same scene Edmund, the bastard son of Gloucester, discusses these eclipses saying "My father compounded with my mother under the Dragon's Tail and my nativity was under Ursa Major, so that it follows I am rough and lecherous. For I should have been that I am, had the maidenliest star of the Firmament twinkled on my bastardising." The solar eclipse of 12th October fell within one degree of longitude of Spica, the brightest star in the constellation of the Virgin and hence 'the maidenliest star in the firmament'. Ref. PN. 10/99

October 14, 1688 John Evelyn, a founder member of the Royal Society, made the following entry in his celebrated diary for 14th October (Old Style) 1688: "The Kings Birth-day, no Gunns from the Tower, as usual: The sunn Eclips'd at its rising: This day signal for the Victory of William the Conqueror against Herold neere Battel in Sussex: The wind (which has hitherto ben West) all this day East, wonderfull expectation of the Dutch fleete." It's interesting that Evelyn should note this eclipse, for it wasn't even partial at London. It wasn't good news for King James upon whose birthday it fell: within the month another William had landed in England and by the end of the year James had fled. The invader was crowned William III early next year. Ref. PN 10/99

October 14, 1788 Sir Edward Sabine (1788-1883). Mentioned a correlation between sunspots and magnetic disturb on earth. (Ref. Rc 1999).

October 14, 1934 Death of Sir Arthur Schuster (1851-1934). A comet is discovered and photographed by Sir Arthur Schuster (1851-1934), Germany/UK, during an eclipse in Egypt: first time a comet discovered in this way has been photographed. The Total Solar Eclipse had been observed by Sir Joseph Norman Lockyer (1836-1920), Ranard and Schuster from England, Tacchini

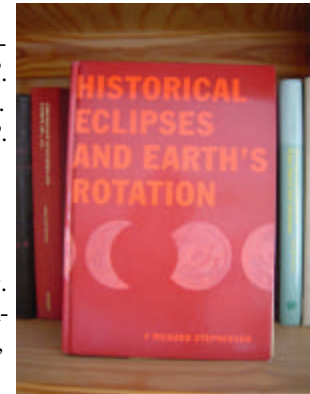
(Continued on page 4)

ECLIPSE CALENDAR

from Italy, Trépiéd, Thollon and Puiseux from France. Observation from Sohag at the Nile. (Ref. Rc 1999)



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.



October 15, 1582 Switch over to the Gregorian calendar and cut 10 days from the calendar. Gregory's Decree promulgating the Reform directed that the day 4 Oct., 1582, should be followed by the day 15 Oct., 1582. Not all the Catholic countries, and not all the Protestant ones, switched precisely at that time. PP/TS-9/97

October 16, 1977 3798 de Jager 2402 T-3. Minor Planet discovered 1977 October 16 by I. van Houten-Groeneveld at Palomar. Named in honor of Cornelis de Jager, Dutch astronomer. His research concentrated on solar physics. He also attended different eclipse expeditions.

October 17, 1906 1781 Van Biesbroeck A906 VB. Minor Planet discovered 1906 October 17 by A. Kopff at Heidelberg. Named for George Van Biesbroeck (1880-1974) in recognition of, and appreciation for, many years of devoted services to astronomy through observations and discoveries of minor planets, comets, satellites, and double stars. He also attended solar eclipse expeditions.

October 18, 1967 There was an eclipse of the sun by the Earth on October 18, 1967 and Surveyor V was functioning then on the moon. Unfortunately, the mirror could not be tilted to see the Earth, although temperature measurements were obtained as they did with Surveyor III, but more successful that time. (ref. S, LE O 1943-1993, FG)

October 19, 1965 Carrington rotation number 1500 starts. Begin 9 November 1853. (ref. DD 10/98)

October 21, 1790 The first official American total eclipse expedition when a party went to Penobscot, Maine. It was led by Samuel Williams of Harvard, and was given 'free passage' by the British forces, but unfortunately a mistake in the calculations meant that the party remained outside the track of totality. He did not see the corona but only an effect what we call today Baily's beads.

October 21, 1982 Cook 3061 (1982 UB1): Minor planet discovered October 21, 1982 by E. Bowell at Anderson Mesa. Named for James Cook (1728-1779), British circumnavigator and one of the first scientific navigators. He observed the Solar Eclipse of 1766 August 5 from Newfoundland and in 1769 measured the transit of Venus from Tahiti. MPC 10846. Named proposed by the discoverer. - VK 6/97

October 21, 3046 Next total solar eclipse at the location of Cincinnati Observatory, Ohio. The last total solar eclipse took place on 2 January 1395. Though, there are in the meantime near-misses on 7 August 1869 (mag 0.993) and on 8 April 2024 (mag 0.996). ref. Private JM 9/99.

October 22, -2135 (2136 BC) The first record of a solar eclipse was made in China during the reign of the Emperor Chung K'ang. The Chinese considered this event to be an attack on the Sun by a dragon, and they endeavored to scare the dragon

ECLIPSE CALENDAR

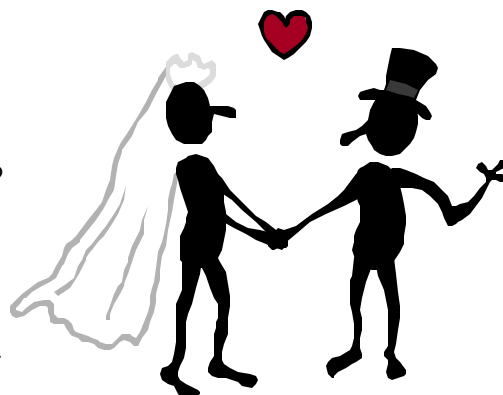
away by making as much noise as possible. It is not sure if this description was a prediction of an observation.

October 22, 1885 Prof. Theodor Ritter Oppolzer (1841-1886), professor in astronomy in Vienna and author of the monumental Canon der Finsternisse started his work. The canon was published spring 1887.

October 22, 1977 Launch of ISEE 1 and ISEE 2 (US). Research of solarwind, magneto sphere and magneto tail. Ref. DD 10/99.

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.

October 23, 1976 A friend of Eric Jones (England) was invited for a wedding on October 23, 1976 in Melbourne. The Bride and Groom where not interested in astronomy. You can imagine their reaction as they left the Church after the ceremony and the sun was blotted out. I suppose it must have made the wedding photographs difficult to take, and I am just trying to imagine a posed picture of bride and bridesmaid all with solar filters...



October 23, 1998 SOHO again full operational after contact loss on June 24, 1998. Ref. DD 10/99.

October 24, -0443 (444 BC) "Duke Li (of the Chinese dynasty), 34th year. The Sun was eclipsed. It became dark in the daytime and stars were seen." Refers to an annular solar eclipse of 24 October 444 BC. From: Shih-chi (Chinese). Quoted in Historical Eclipses and Earth's Rotation, by F Richard Stephenson, Cambridge University Press, 1997, page 227. Stephenson points out that as only 93 percent of the Sun was obscured, the allusion to darkness must be exaggerated, and that this eclipse is the earliest in any civilisation for which the stars is reliably reported. Venus and Mercury were well placed for visibility.

October 24, 1667 Death of Govaart (Godfried) Wendelen, Belgian astronomer. Observed eclipses and calculated solar parallax. Known as Vendelinus (Mooncrater) and born in Herk-de-Stad, Belgium in 1580 which is also the birth city of Patrick Poitevin.

October 24, 1995 While many eclipse chasers went to India, Thailand, Vietnam, etc., PP went to the far east small island and observed totality from Angges, Sangihe Talaud (Sulawesi) with 1m54s totality.

October 25, 1789 Birth of Samuel Heinrich Schwabe (1789-1875), German chemist and amateur astronomer. Chased for inter Mercury planet. Discovered in 1843 sunspot cycle. (ref. DD 10/98, Rc 1999)

October 25, 1975 Satellite HEOS 1 (US) stops. Studied seven years long the Sun and relation to the earth (ref. DD 10/98)

October 26, 1147 "On Sunday, the 7th day before the Kalends of November (Oct 26), a solar eclipse occurred at the 3rd hour and persisted until after the 6th. This eclipse stood fixed and motionless for a whole hour, as noted on the 'clock' . . . During this hour a circle of different colours and spinning rapidly was said to be in the way." Refers to an annular eclipse in Brauweiler, Germany, of 26 October 1147. From: Annales Brunwilarensis. Quoted in Historical Eclipses and Earth's Rotation, by F Richard Stephenson, Cambridge University Press, 1997, page 394.

October 26, 1841 Birth of Prof. Theodor Ritter Oppolzer (1841-1886), professor in astronomy in Vienna and author of the monumental "Canon der Finsternisse".

October 26, 1970 (12 Feb 1893 - 26 Oct 1970) 1951 Marcel Minnaert studied biology at the University of Ghent in his native Belgium and physics at the University of Leiden in the Netherlands. Minnaert published a collection of poems related to astronomy and popular books on light and color and physics of the open air.

(Continued on page 6)

ECLIPSE CALENDAR

October 27, 1728 Birth of James Cook (1728-1779), British circumnavigator and one of the first scientific navigators. He observed the Solar Eclipse of 1766 August 5 from Newfoundland and in 1769 measured the transit of Venus from Tahiti. (Ref. Rc 1999)

October 27, 1780 Saros 120. Samuel Williams, prof. Harvard led expedition to Penobscot Bay, Maine (during Revolutionary War! - and Bay was behind enemy lines). British granted the party safe passage.

October 29, 0840 The only emperor to have died of fright because of an eclipse was Louis of Bavaria, in 840. His three sons then proceeded to indulge in a ruinous war over succession.

October 29, 0878 Total solar eclipse of which London was just in the path of totality. King Alfred wrote The sun was eclipsed the first hour of the day. Also Tycho Brahe mentioned in his Historia Coelestis to the Annales Fuldenses, of which the sun was eclipsed after the 9th hour and the stars were visible. Ref. St LK 06/99.

October 29, 1837 Birth of John Herschel. During the eclipse of 18 August 1868 from the Red Sea through India to Malaysia and New Guinea, prominences are first studied with spectroscopes and shown to be composed primarily of hydrogen by James Francis Tennant (1829-1915), UK, John Herschel (1837-1921, UK - son of Sir John Frederick William Herschel 1792-1871, grandson of Sir William Herschel 1738-1822), Pierre Jules Cesar Janssen (1824-1907, France), George Rayet (France), and Norman Pogson (UK/India). (Ref Rc 1999)



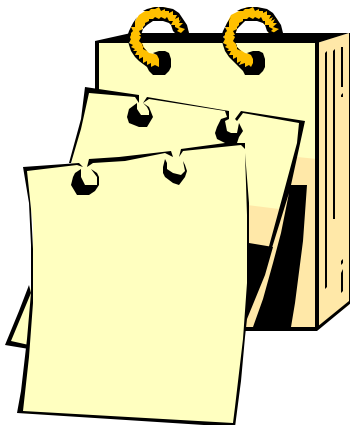
October 31, 1920 Hildago 944: Minor planet discovered October 31, 1920 by W. Baade at Bergedorf. German astronomers observed the Total Solar Eclipse 1923 September 10 in Mexico. After the Eclipse they had an audience with the president of Mexico and asked permission to call this planet after Miguel Hidalgo y Costilla (1753-1811) who proclaimed the Mexican independence in 1810. AN 221, 159 (1924). Ref. VK 6/97

October 31, 1999 Jack Evans, first Director of the Sacramento Peak Observatory, from 1952 to 1976, and his wife, Betty, died on October 31st. He was 90; she was 89. With their health becoming more fragile and uncertain, they had agreed to end their lives rather than become a burden to their children and grandchildren. Jack left a note that they wanted to make an end when they still were gloriously happy. Starting from a bare site in the Lincoln National Forest, Jack collected an outstanding scientific staff, and with their help, built Sac Peak into the world's premier solar observatory. Ref. JB 11/99

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

Best regards,

Patrick



(Continued on page 7)

COMMENTS ABOUT THE CALENDAR

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

Friends, The statement about the year 2817 of the firstcoming TSE in Amsterdam is probably untrue. This is based on calculations with obsolete coefficients for the lunar acceleration in Longitude 'n-dot' and for the Earth rotational clock delay 'Delta-T' (studies of Spencer Jones 1939, Improved Lunar Ephemeris of Eckert et al 1954). I checked this by calculations based on these coefficients that were published in 'Tables of Moon and Sun' (Jean Meeus, Leuven, 1962), my first professional book about eclipse mathematics that I obtained in 1962.

1. Nowadays n-dot has no longer the value $-22.44"/\text{century}^2$, but $-26.0"$.

2. Modern expressions of Delta-T provide a lower parabolic grow than formerly. These have been taken into account in eclipse software like Wineclipse (Heinz Scrsibrany) and Emapwin (Takesako). Both these programs show the TSE of 22 July 2381 as total for Amsterdam, and both show the TSE of 2 September 2817 as partial for that capital while the totality belt pass quite far southwest along and outside Holland. Conversely: calculations with the old values indicated the totality belt of 2381 pass very close northward along Amsterdam. Greetings, Wil Carton. [this message is sent without attachment. So if you get an att, it has erroneously been added by the system software, and I urge you: delete it, throw it away without opening it].

From : Jean Meeus <JMeeus@compuserve.com>

My calculation indicates that the solar eclipse of 2817 September 2 will be partial, but nearly total, at Amsterdam, the magnitude of the partial eclipse being 0.999 !

The calculation has been made by means of Chapront's lunar theory ELP, but with Chapront's new (1998) expressions for the elements of the lunar orbit. For Delta T, I used the expression given by Chapront in 1998 (which is one of the expressions given by Stephenson, but slightly modified by Chapront on the base of his new value for the Moon's acceleration n'). Chapront's formula gives Delta T = 2628 seconds for the eclipse of September 2817.

For Amsterdam, I used the coordinates $4^{\circ}54'$ E, $52^{\circ}22'$ N.

If we increase Delta T to 2680 seconds, the eclipse just becomes total at Amsterdam. So it remains *possible* that the eclipse will be total there. Nobody knows for certain, as accurate predictions for Delta T cannot be made 8 centuries in advance. Jean Meeus

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

Jean Meeus has written, "My calculation indicates that the solar eclipse of 2817 September 2 will be partial, but nearly total, at Amsterdam, the magnitude of the partial eclipse being 0.999 !" I wish we could be there to see it. Reports of the almost-total eclipse in 1984 held that the sight of Baily's beads all the way around the moon was quite stunning. Jim Huddle

From : "Madden.G" <iluvex@netacc.net>

Jim and all, I would love to see this as well. There is a way. . .

We need to move the moon closer. Since that is not possible, we have to make it APPEAR closer. We can do that by getting closer to it.

The question for a "almost total" (mag. = .9999) eclipse is how close? And which partial or annual in the next twenty years would be suitable? George Madden

From : Alan Leighton <leighton@gmx.net>

(Continued on page 8)

COMMENTS ABOUT THE CALENDAR

If 2 Sep 2817 is as rainy as 2 Sep 2001 was, the good people of Amsterdam, too, will have to get closer to the moon, not just to see Bailey's beads, but to see ANY phenomena, except the lights turning off. Now, if they fly above the clouds above their city, will the Moon be enough larger that the .9999 magnitude eclipse will actually be greater the 1.0000?? Alan Leighton



From : JohnLX200@aol.com

leighton@gmx.net writes: Now, if they fly above the clouds above their city, will the Moon be enough larger that the .9999 magnitude eclipse will actually be greater the 1.0000?? >>

It seems to me you'd have to fly at an altitude of 0.0001 of the distance to the moon, or almost 40km high. Luckily they have plenty of time to design the advanced craft to do so. Or perhaps just stopping partway up the elevator to a geostationary city? John

From : "Gerard M Foley" <gfoley@columbus.rr.com>

I did not understand Jean Meeus to have predicted an annular eclipse, but rather a total eclipse which would be partial at Amsterdam. Am I mistaken?

From : Jean Meeus <JMeeus@compuserve.com>

Prof. J.R. Huddle wrote : I did not understand Jean Meeus to have predicted an annular eclipse, but rather a total eclipse which would be partial at Amsterdam.

This is correct. The solar eclipse of 2817 September 2 will be a TOTAL one. Nowhere will it be annular. Near longitude 5° East, the width of the path of totality will be 135 kilometers.

What my calculation shows is that (under assumption the value adopted for Delta T is correct) the path of totality will just miss Amsterdam, so in that city the eclipse will be a big partial of magnitude 0.999.

Consequently, considerations about going thousands kilometers high to make the a total one are silly! Just go a few kilometers southwest from Amsterdam, *along the Earth's surface,* to be inside the path of totality...! Jean Meeus

From : Anne Marigold <Anne.Marigold@sis.securicor.co.uk>

Would the 0.999 partial effect still resemble anything at totality e.g. might there be a diamond ring or Bailey's?



GENERAL TOPICS

From Daniel Fischer <dfischer@astro.uni-bonn.de> To : SOLARECLIPSES@AULA.COM, sofi2001@yahoo.com Subject : [SE]

A role for 'Retinex' in corona image processing? Date : Sat, 1 Sep 2001 21:50:29 +0200 (MET DST)

A rather shallow press release (1) from NASA's Langley Research Center has led me to a most interesting algorithm based on ideas by the late E. Land, developed by NASA Earth scientists for satellite image analysis and soon to be commercialized (2). This 'Retinex' procedure is aimed to yield images that mimick what the eye-brain system sees (in contrast to restoring the actual brightness values of each pixel) and has been optimized by visually comparing processed images with the real thing.

While the results (3) are remarkable, I'm not so much impressed by their realism than by the ability of the Retinex method to get rid of vast brightness gradients and bringing out high spatial frequency details without (apparently) producing any of the much-hated artefacts of algorithms like unsharp masking. How the math works is explained in a 1996 paper (4) - I wonder how widely it is being used already. The authors claim that the final software product "MSRCR" beats every other image enhancement technique under practically all conditions (5) ...

What might make MSR a fine method for enhancing images of the solar corona is its removal of the brightness gradient without the need for any modelling or brute force Fourier filtering. There are different 'philosophies' of corona processing, with some attempting to reproduce what they saw in the sky (6,7), while others go for the maximum of structure, be it with clever filters in the first place (8) or heavy processing (9). The MSR method might be the middle ground many are looking for. Daniel Fischer

References:

- (1) <http://www.spaceref.com/news/viewpr.html?pid=5827>
- (2) <http://dragon.larc.nasa.gov/retinex/background/background.html>
- (3) <http://dragon.larc.nasa.gov/retinex/pao/news>
- (4) <http://dragon.larc.nasa.gov/retinex/background/pubabs/icip-1996.html>
- (5) <http://dragon.larc.nasa.gov/retinex/background/pubabs/ist-05-1997.html>
- (6) <http://www.wendycarlos.com/eclipse.html>
- (7) Carlos & Kern, Sky & Telescope 102 #4, 128 (Oct. 2001)
- (8) <http://www.iap.fr/LaUne/Eclipse01/CouronneFiltreNeutre.html>
- (9) <http://www.icstars.com/Mad/eclipse/photos/pages/bwtotalenhanced.htm>



From : "Vic & Jen Winter, ICSTARS Inc." <webmaster@icstars.com>

Image correction processing comments: I doubt that this particular adaptation will be incorporated to our advantage very soon. I examined the examples on the <http://dragon.larc.nasa.gov/retinex/pao/news> page. As an individual who has color corrected images for a living, I noticed that many example images' corrections appear to be within the daily standards of available color correction technology with a few, medium experience-level steps. The large advantage I saw was in the area of back-lit images; whereas the component portions of the image cannot be corrected with the same tone curve together. At an advanced level of image processing, we have many other simple solutions to achieve these corrective techniques.

I would also like to note that several of the examples referenced in the message were not what I feel many would concur were the best example of any finished composite image. The example taken from our work, <http://www.icstars.com/Mad/eclipse/photos/pages/bwtotalenhanced.htm> for one, was literally an exaggeration enhancement of coronal detail, not intended in any way for visual representation. That was this image:

http://www.icstars.com/Mad/eclipse/photos/pages/aa_jentotalenhanced.htm

We do not use any of any unsharp masking and do not see that it is necessary in any of the standard practices published for eclipse image processing. Many artefacts of algorithms occur in the contrast difference images as a result of the process amplifying granulation from resolution or film grain present. Improving grain resolution by increasing the film size format or the input scale resolution greatly affects the occurrence of these artefacts.

(Continued on page 10)

GENERAL TOPICS

(Continued from page 9)

I personally feel that references to the work Wendy Carlos (and Jonathan Kern) have achieved did give justice to their accomplishments in visual representation either.

I site the following: (Please forgive me if my reports are in any way inaccurate. I was not present or involved, but just speak in professional respect for their work)

<http://www.wendycarlos.com/eclipse/01fin.jpg> Alone, processed without the images captured by Jonathan Kern alone stands as one of the most successful representations of corona.

<http://www.wendycarlos.com/eclipse/01rgrd.jpg> The subsequent images captured via the Newkirk Camera are important for capturing the additional chromatic components of the corona.

<http://www.ligo-la.caltech.edu/~jkern/Eclipse01/coronalimages/pages/Composite.htm> Their composition into a final product depicting the details and contrast of coronal streamers as well as an effective representation of apparant color in the inner and outer corona is, one of the most effective visual representations I have ever seen.

I do not feel that an adopting an alternative method for that image correction which doesn't include this important step of secondary chromatic component could be as successful. The sensitivities any film to full density or chromatic representation of what the eye can percieve has not yet been achieved. Until that time, I feel that a methodology deriving it's results from one single image for contrast. - or a single film variety for chromatic content would be premature.

Besides, I have a hard time imagining an image much more accurate than the composite completed this year by the Carlos / Kern team. Clear Skies, jen

From : KCStarguy@aol.com To : SOLARECLIPSES@aula.com Subject : [SE]

Another eclipse sighting Date : Sun, 16 Sep 2001 22:56:06 EDT

from Dr. Eric Flescher (KCStarguy@aol.com) eclipse sightings listed at <http://members.aol.com/kcstarguy/blacksun/eclipsesightings.htm>

>From the book "1000 things you should know about Space" Page 28 eclipses

An eclipse is when the light from a star such as the sun is temporarily blocked off by another space object

says lunar eclipses happen once or twice every year and last only a few hours (not always)

In a total lunar eclipse , the Moon turns a rust red (not always)

There will be a lunar eclipse visible from most of the Earth on May 16,2003

says a solar eclipse is when Moon comes between the Sun and Earth casting a shadow a few miles wide on the Earth's surface (usually bigger then that!)

There are one or two solar eclipses every year but they are visible only from a narrow strip of the world. (not every year and sometimes more)

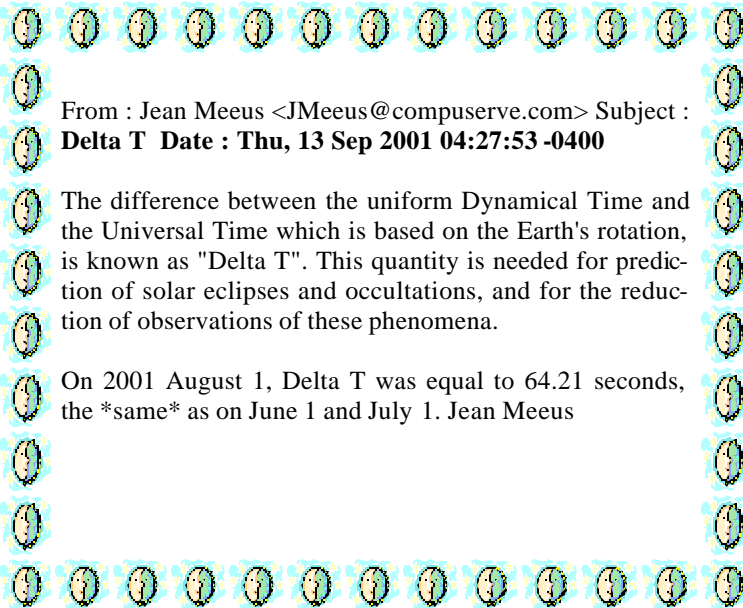
mentions 6/21/2001 eclipse and the 12/14/2002

solar eclipses are possible because the Moon is 400 times smaller than the Earth than the Sun , and is also 400 times closer to the Earth. This means the Sunn and the Moon appear to be the same size in the sky.

comments?

From : "Madden.G" <iluvex@netacc.net>

Sounds like it was written by a fact checker from the New York Times. gjm



GENERAL TOPICS

From : "Patrick Poitevin" <patrick_poitevin@hotmail.com>
To : SOLARECLIPSES@AULA.COM Subject : [SE]

Eclipse books Date : Tue, 18 Sep 2001 16:46:12 +0000

Dear All, Last winter, Lee Price of Knollwood Books passed away. Knollwood Books had lots of interesting Eclipse books. Dan Koehler takes over most of the astronomical books. Look at his web site and search for eclipse books:

Eclipse books

This page can be found at abebooks.com, the world's largest network of independent booksellers. Books: rare, used and out-of-print; we have them all!

To view this page online, simply paste this web address into your browser:

<ahref="/bti/redirect.html?http://dogbert.abebooks.com/abe/EmailToAFriend?ph=3&urlid=46596" target="newLink">http://dogbert.abebooks.com/abe/EmailToAFriend?ph=3&urlid=46596

Success and ...keep those solar eclipse related messages coming ... Best regards, Patrick



Book Samuel Mitchell, Eclipses of the Sun

From Patrick Poitevin To SEML Date 23/09/01 RE

Eclipse references Tribuna astronomia y universo

Dear All, The September issue of the Spanish astronomical magazine Tribuna de Astronomia y Universo contains lots of reports on the past total solar eclipse of Africa:

Eclipse de sol, Zambia 2001 by Grupo Eclipse Urania 2001, Jose Ripero

Expedicion Saros 2001: Informe del eclipse desde Kafue Park by Expedicion Saros 2001 (Francisco A. Rodriguez Raminiez, Anton Fernandez Villaneuva, Susana Benitez Molina, Miguel Angel Lopez Valverde, Angel Ilanas, Federico Fernandez Pardavilla)

Shelios 2001, la relatividad se acerca a Africa by Angel Gomez Roldan, Alejandro Oscoz Abad and Miquel Serra-Ricart

Expedition Zimbabwe 2001 by Agrupacion Astronomica de Catelldefels

This magazine is the only one I read up to date with an eclipse coverage of 12 full pages. Congratulations all. Best regards, Patrick

From Robert Slobins

Patrick: Please give us the contact information for this journal. --Robert B Slobins

From Francisco Rodriguez

Hi, You can see our report (in spanish) published in the magazine "Tribuna de Astronomia y Universo" in www.saros.org Regards, Francisco A. Rodriguez Ramirez

From PP

Subscriptions: Avda. Rafael Finat, 34, 28044 Madrid (Spain), tel. (91) 710 73 49, fax. (91) 705 43 04, e-mail astronomia@equiposirius.com, webpages <http://www.astronomia-e.com>

Editor: Apdo. 5314 - 08080 Barcelona, Spain e-mail: alfonso@lopez-borgonoz.com

From PP TO SEML Date 27.01.01 RE Eclipse reference Astronomy

Dear All, Following solar eclipse related issues are pub-

(Continued on page 12)

GENERAL TOPICS

(Continued from page 11)

lished in the October issue of Astronomy. See <http://www.astronomy.com>

Behind the Scenes: Eclipsing Africa by Bonnie Bilyeu Gordon, page 6

Talking Back from our readers: This Diamond Ring by Tony Galvan III, page 12

Solar Eclipse/Solstice/Equinox by Lynn Palmer, page 12

Going to Africa to watch an eclipse; Eclipse Chasers on Safari by Bonnie Gordon and Richard Talcott, pages 48 to 53

Hot Shots: a collection of your images and observations (African Adventures; Eclipse Memories), pages 107 to 112

Best regards, Patrick

From : "Jörg Schoppmeyer" <schoppy@kwsoft.de>

Hi, there was a map with 3 eclipses in southern america on of Fred's pages, but I cannot find the link anymore. Can somebody help me ? Joerg

From : Michael Gill <eclipsechaser@yahoo.com>

Joerg, This link.. <http://sunearth.gsfc.nasa.gov/eclipse/TSE2001/TSE2001fig/TSE2001fig16.GIF>

...has the track of the December 2001, June 2002 and April 2005 solar eclipses through Mexico and Central America. Michael.

From : "J.P. van de Giessen \(\fol\)" <janpieter@giessen.fol.nl> To : <SOLARECLIPSES@AULA.COM> Subject : RE: [SE]

Epigram on Hi and Ho Date : Fri, 28 Sep 2001 22:41:26 +0200

Rob, and others, Some months ago you wrote about Li Hung-Chang. This Li Hung-Chang, «lee hoong jahng» (1823-1901), was a Chinese statesman. He started programs to modernize China's military forces and to develop its industry. Li was born in Anhwei province. He won fame when he helped crush the Taiping Rebellion (1850-1864), which threatened to overthrow the Manchu rulers of China. From 1870 to 1895, Li was China's leading statesman. He held key government posts, negotiated treaties with other nations, and helped China's self-strengthening movement by introducing military and technological methods used in Western nations. Despite these improvements, China lost the Chinese-Japanese War of 1894 and 1895. Li was severely criticized after that, and had to give up many of his powers.

I couldn't find anything about the epigram, so if anyone of you have more information about it, please let me now. Jan Pieter van de Giessen



From : "Waverly Auctions" <wavauc@clark.net> To : "Patrick Poitevin" <patrick_poitevin@hotmail.com> Subject : Re:

Waverly Auctions Knolwood Books Date : Tue, 18 Sep 2001 10:48:30 -0400

That collection of Lee Price (Knollwood Books) will be sold by Waverly in mid-November. The catalog will be posted on our website about two weeks prior to the sale at: www.waverlyauctions.com. We do accept bids in advance of the sale, by FAX, VOICE, or EMAIL. Dale Sorenson



Book Schaeberle, Total Eclipse of the Sun

GENERAL TOPICS

From : Kidinvs@aol.com To : SOLARECLIPSES@aula.com Subject : [SE]

If only there were solar eclipses to dream about... Date : Tue, 11 Sep 2001 22:51:32 EDT

The cold front went through the NY area last night with big bolts of lightning, and claps of thunder... louder than usual, and the rain stopped at about 9pm...and by this morning, the air had cleared. The sky was a deep, crystal blue with the sun coming up into a very refreshing cool morning. What a beautiful morning it was.

And I drove to work as usual, to the World Financial Center, and arrived at about 8am. I parked my car, and today in particular, as I walked into the World Financial Center, I look up at the Twin Towers, and commented as I had to myself often over the last 25 years that I have worked in the area, that the white buildings looked so majestic with the gorgeous blue sky behind it. At 8:45am, I was sitting at my desk, on the 23rd floor, directly across the street from the WTC when we heard an explosion. We looked out the windows, and saw debris falling from the sky, looked up at the Trade Center north tower, and saw flames. There was no clue that a plane had struck, in fact, that suggestion would have sounded silly at the time. I, always being the curious one, ran down stairs, and saw the most horrific sight... the North Tower of the WTC on fire. Sirens blaring.. police gathering. I was in the same spot in Feb, 1993, and this makes the last bombing look like a firecracker. Suddenly, people begin to scream, and hundreds of people began to run in all directions. As people were running, I managed to get a persuading person to tell me that a plane had hit the tower. In disbelief, I asked if he was sure, and he said that he saw it!

The ensuing panic had started because another plane was spotted headed toward the trade center. I had not heard this. So, I went back into my building to get my keys, and bag, and as I entered, the 2nd explosion was heard...Much louder than the first, a 767 hitting the South Tower. I got back into my office, grabbed my stuff, told some co-workers that if you dont leave now, you may never leave, and jumped into my car. I got a few blocks away, jumping some sidewalks to do it (Thank goodness for my NYC taxi driving days). I finally made it to the Brooklyn Bridge, where the right lane had become an area to park, and watch this movie continue to unfold...and I saw the NYC skyline change forever.

I dont know where I will go tomorrow morning. I dont know if I have a job. I dont know if the markets will ever open. However, I do know that people I know must have died today, I DO know that life in America will never be the same... and I know that the skyline of the greatest city in the world will rise again. We must rise with it. It has been awhile since I have appreciated being alive as I have today. Rick Brown www.eclipsesafaris.com

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

Amen ! God bless America.



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

Dear All, Everybody must know about the dramatic catastrophe which happened yesterday in the the States. Some of us are directly involved, some of us have friends or family whom have been affected. We all feel very, very sorry for them and for what happened. A horrible dream or nightmare, was true when you opened your eyes again.

As mentioned earlier on this mailing list, why can't we live in peace, why can't we enjoy the pleasures of live. Let's all have a silence moment and think about it.

As we have all different countries, nations, religions, ethnic groups on this SEML, I would appreciate we do not use the SEML for messages which are not solar eclipse related. Do not use the SEML to express your grieves of anger. Thank you for your understanding. Best regards, Patrick

GENERAL TOPICS

From : "Patrick Poitevin" <patrick_poitevin@hotmail.com> To : SOLARECLIPSES@AULA.COM Subject : [SE]

Magetic observation of the 1994 eclipse Date : Fri, 07 Sep 2001 05:55:54 +0000

Dear All, One of my friends asked me about the magnetic observation during the total eclipse in 1994. Could you please let me know who observed it, or who knows about it.

Thank you in advance. Best regards, Patrick

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

In my talk at the Totality Day Conference, I mentioned some data by Dr. Andy Hollis of the Open University in Milton Keynes, who was not in attendance that day. Dr. Hollis measured magnetic field intensity at Truro in 1999, so this is not the 1994 experiment Patrick mentioned, but anyway, Dr. Hollis's data is on the web at

<http://yan.open.ac.uk/~ajh47/eclipse.htm> Dr. Hollis gives his e-mail address at the bottom of that page. Best Regards, Jim Huddle



From : "Richard Monk" <richard.i.monk@ntlworld.com> To : <SOLARECLIPSES@AULA.COM> Subject : [SE]
Pushpin sets for TSE tracks Date : **Tue, 4 Sep 2001 22:19:39 +0100**

Hi all, With all this forward planning going on I thought I would offer the group some of the pushpin sets I have created which plot the tracks of some of the forthcoming significant TSEs.

These work fine in Microsoft Encarta World Atlas 1998 and can be exported to AutoRoute programs of the same era. Microsoft forgot about supporting pushpins on Atlas 99 but I am hoping that by the next release they will have had a change of heart.

Each centre line pushpin has a set of notes giving UT, latitude, longitude, track width, eclipse duration, sun's altitude, local mean time. The northern and southern limits should have coordinates and time.

I have also included some sets of pushpins for Autoroute 2001: ASE2003, ASE2005 and TSE2006. Due to the way pushpins work in that application they are significantly larger files than the earlier ones.

I have prepared sets of pushpins up to 2030 and data sets for GPS devices - but I will leave the latter to Peter. Depending upon interest and demand I can make these available although I might have to "clean up" some of them first!

You can find these sets on my website, <http://homepage.ntlworld.com/rimonk/index.htm> and there may still be time left to inspect some very average pictures that I took of my trip to Zimbabwe last June before I have a sort-out. Best wishes, Richard

GENERAL TOPICS

From Klipsi TO SEML Date 26.09.01 RE

Great Sony TVR 330 camera

Howdy, folks ! I guess some of us have just recently bought a new video camera, for the June 21 total eclipse.

If you haven't, and if you are shopping for a new video camera for Costa Rica / Mexico and beyond, here's a great new cam:

the Sony TVR 330 .

Digital 8 video camera.

interesting for sun images: x25 optical zoom (equivalent 42-1050mm focal length !!!), with auto and manual focusing !

that is as if you had a Celestron C90 spotting scope in your camera. or 80% of a Meade ETX-90.

new: not only video out, but also video in ! So you could film the eclipse, and then later when you are back in your hotel room you can connect your TV to your camera and record local news reports about the eclipse on your tape. new: not only DV out, but also DV in.

new: USB port. Great to connect to laptop PC. Can probably be used for live webcasting.

also: memory stick, with up to 128 MB storage space of jpeg photos. of course with super steadycam and super nightshot.

haven't bought one myself... yet ! Santa , where are you ?

From Jean Paul Goddard

I have the Sony DCR PC110E, and on this device USB port can only be used to download the pictures from the memory stick BUT, I succeeded to use this cam as a webcam (connected with the IEEE 1394!!) with realtime capture to HDD.

Cordialement, jean-paul.goddard@noos.fr

From Dale Ireland

Olivier, Does that camera have the other options that are nice for eclipses manual iris control (very important) LCD color viewfinder manual gain control. Dale

From PP

Indeed this is a wonderful camera for solar eclipse (and lunar eclipse) filming. Joanne used the camera the first time for the partial solar eclipse 25 December 2000 on Long Island Beach where Pat and Fred hosted us for Christmas. She used it as well for the Lunar Eclipse later and recently for the 21 June total solar eclipse. The camera was mounted on a Manfrotto tripod and table together with the C90 for visual work. So you can spot and film the eclipse with the camera (on the screen) and you can watch visual through the C90. The Manfrotto mount has a special guiding system where no cables or current is needed, but that you do not notice the chocks of movement too much.

The camera was great for safaris as well. Night vision allowed to see and film animals, or planets, etc, easily. The camera is a recommendation to every one in the solar eclipse world. Best regards, Patrick

From Tony Crocker

Question for photo experts: What is the quality of digital jpegs done with a video such as Klipsi describes vs. digital still camera photos?

From Harvey Wasserman

It appears that the max res for still pics is 640 x 480. Good for emailing, etc., but pretty bad for prints. Still, seems like a lot of camera for the price - about US\$600 street, from what I have seen. Harvey Wasserman

From Klipsi

Hi Dale, manual exposure adjustment, yes (but I don't know if it mechanically works on the iris, or if the exposure is ad-

(Continued on page 17)

GENERAL TOPICS

justed electronically) viewfinder is b/w. but it has a colour screen. manual gain control: I don't know. best regards, Klipsi

From Klipsi

> "Crocker, Tony " Question for photo experts: What is the quality of digital jpegs done with a video such as Klipsi describes vs. digital still camera photos?

certainly lower quality. The D8 cam has 800'000 pixel CCD, while digital photo cameras have 3.3, 4.1 or even 4 megapixels now. So if you intend to get photos of high definition, for large format printing, then this is not the best. BUT.... none of these photo cams comes with a 1050mm zoom lens ! Most photocams have simple x3 or x4 or x5 zoom lens. And you can't change the lens, unless you buy the pricey Canon D30 or Nikon digital pro cam. In video cams, as far as I know the Canon XL-1 is the only video cam where you can change the lens, using Canon's EF lenses. Then again, 800'000 pixels, that is quite good already. Makes nice postcards. And it is specially way good enough for images posted on the web. So if you plan to do an eclipse travel journal, with lots of small images, then you can use the Sony video cam as a camera to capture photos and then transfer them with USB port or DV firewire port to your laptop, resize, edit, and ftp/upload to your website. I think the most important feature, for us eclipse chasers, is the x25 zoom. No competition ! Klipsi

From Joseph Dartsum/Bob Yen

LCD color viewfinder: This is not preferable, since it does not have the resolution a B&W viewfinder has, for critical focusing. The latter is extremely important for solar eclipse videography (or photography).

Manual iris control: this is not preferable, since wide-open apertures will show vignetting & increased distortion. It is better to have a moderate aperture, & change exposure time. (All eclipse photography is done, by changing exposure *time* at a given aperture. See Fred Espenak's table).

Manual gain control: This is not preferable, since this simply changes the gain of the amplifiers. It simply magnifies the shot-noise (Poisson counting statistics) along with the signal, so signal-to-noise ratio is maintained or decreased. Actually, it will give poor aesthetics to the resulting image, since the spatial noise-distribution (in the SRF, spatial-random-field) is more visible..it will look "noisier". Not good.

What you want is *increased* exposure, preferably exposure time. Poissonion S/N ratio varies according to \sqrt{S} , S =signal counts. The bigger the S (signal), the better the S/N ratio. You increase S , with longer time -exposures. .../...

From Eric Fletscher

The pictures are my camcorder are not bad at all. Good for sending over email and small pictures to print if you would like. However they are not high resolution like good megapixel cameras like my kodak 290. Also remember that with the right editing equipment (I use BTVppro and Imovie2 for the mac) you can snap frames from any part of the movie and they look as good as the pictures snapped with the photo option.

More advanced camcorders today might have better photo options but they are still not as good as megapixel cameras. It depends what your ultimately goal with the pictures are. Dr. Eric Flescher (KCStarguy@aol.com)

From Gerry Foley

Canon, Olympus and Sony all make digital still cameras with more than 2 million pixels and 10X zoom lenses. This works



Sony camera in action

(Continued on page 18)

GENERAL TOPICS

out to 350-380 mm equivalent focal length in 35mm.

Four views of the moon with two of these cameras are shown at <http://albums.photopoint.com/j/View?u=10256&a=714522&p=49369319> and the three following images. They may help to judge whether the cameras would be of interest for eclipses.

On CCD sizes it should be remembered that a 4 megapixel camera has only twice the theoretical resolution of a 2 megapixel one. The resolution is also affected by other factors than pixel count. Gerry K8EF

From Robert Slobins

.../... By the way, I taped the eclipse with flash spectrum on an 'old' Sony TRV-615 camcorder. Except for the dramatic drop-off in light that caused me to fiddle with the controls, I had very good focus and it shows in the myriad of lines at the contacts. Of course, the resolution does not match film, where I have even more lines. The only problem with getting emission lines was the fact that there were two long diamond rings that obliterate the low-level heavier metal gases. (I would sand down the moon ;-)

The tape also recorded my wife's first-ever astronomy lecture: play-by-play of totality. (Maybe by 2010, she'll become the Howard Cosell of eclipses :-)

I am sure that features like digital imaging and exposure programming would help normalize the exposure as our eyes do. cheers/Robert B Slobins

From : "Hole in the Sky Tours" <eclipse98@earthlink.net>

the trick with these is to look at the amount of magnification that is optical and the amount that is electronic. All of these cameras will give the first part of the magnification using a zoom lens, then the electronically enlarge the image to go the rest of the way. To demonstrate this for yourself, take an image in Paint, or any other similar program and enlarge the image, and then do it again and again until you see the huge irregular pixels. At this point the original image is pretty much unrecognizable, but you have been able to "enlarge" the image 100's of times! If you truly want high quality images, look at the 3 CCD cameras (as opposed to the normal '1' CCD cameras. Be prepared to pay for it though, they run about \$1800! Jerry Hole in the Sky Tours

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

Jerry: We may have touched on this at Hwange, but for the benefit of this group:

What is the equivalent film ISO for these 3-CCD cameras?

When I photograph the flash spectrum, I use ISO 160 film pushed 2X (ISO 640) at f/4 with a shutter speed of 1/60 second. I notice that the expensive Canon models have detachable L- lenses (among the world's best; you can just about use them wide-open on stars!) that have calibrated adjustable diaphragms. What would be the equivalent lens and exposure setting for the Canon CCD chips?

Do these cameras have programming features where one can tell it "This is the exact amount of light that is going to reach the chips, and the lens iris will dilate to maintain that level at second contact and through totality." ? Robert B Slobins

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

This is why it is best to purchase a camera with OPTICAL, as opposed to DIGITAL, zoom. This was touched on by Olivier Staiger in his earlier posting on this subject - 25X optical zoom is pretty impressive.

On my still digital Sony mavica I have 8x optical zoom and have turned off the digital zoom feature, so I cannot mistakenly zoom to it in the heat of the moment. Odille Esmonde-Morgan



GENERAL TOPICS

From : David Makepeace <imoon@interlog.com> To : Solar Eclipse Mail List <SOLARECLIPSES@AULA.COM> Subject : [SE]

New Eclipse Website for Canada Date : Wed, 12 Sep 2001 17:40:49 -0400

At the beginning of November this year, I will be launching a new website at <http://www.eclipseguy.com>

The site is dubbed "the Canadian eclipse chaser's home base on the internet" and will feature stories, photography, expeditions, reports, links and profiles from Canadian eclipse enthusiasts, amateurs and specialists across the country.

This is a formal request for any Canadians monitoring this message with whom I have not already spoken to contact me at your convenience with the hope of including you on the site.

Thanks to all,

David Makepeace Toronto, Canada UmbraLog 1257

From : Jean Marc Larivière <jeanmarc.lariviere@sympatico.ca>

To : SOLARECLIPSES@AULA.COM Subject : Re: [SE] New Eclipse Website for Canada Date : Thu, 13 Sep 2001 22:43:23 -0400

Hi David, What you be agreeable to listing Shadow Chasers/Les Chasseurs d'Ombre on your Web Site. The NFB has a number of other eclipse videos that could also be listed, or what about a list (as complete as possible) of ALL professional eclipse videos available along with films in which an eclipse has been weaved in the story line. I already have a small data bank that I would be happy to update and supply to you at the appropriate time. Let me know what you think. Jean Marc



From : David Makepeace <imoon@interlog.com> To : <SOLARECLIPSES@AULA.COM> Subject : Re: [SE] New Eclipse Website for Canada Date : Sat, 15 Sep 2001 11:10:13 -0400

Jean Marc, I would be very happy to list Les Chasseurs d'Ombre on the site, of course. I also LOVE the idea of starting an authoritative list of professional eclipse films. Thank you for the excellent idea. I will add it to my design for the site and call upon you for your current list in the coming weeks.

How's bachelor life???

David Makepeace Toronto, Canada UmbraLog 1257

From : "Francisco A. Rodriguez Ramirez" <farr@navegalia.com> To : <SOLARECLIPSES@AULA.COM> Subject : [SE] **New web site SAROS group** Date : Wed, 5 Sep 2001 18:06:31 +0100

Hi all, SAROS group have a new web site. The new URL is www.saros.org

Regards, Francisco A. Rodriguez Ramirez SAROS www.saros.org

GENERAL TOPICS

Low Altitude Central Eclipses and the 2003 Annular Eclipse talk by Sheridan Williams on TD2001

What a strange title "Low Altitude..." does he mean observing from the Dead Sea, which is one of the places on Earth with the lowest altitude? No, the title refers to observing with the Sun at a low elevation in the sky, say less than 20°.

Most people choose to go and see total solar eclipses close to the centre line, and at a point on the track with longest duration. A suggestion for not choosing this option was given at the Solar Eclipse Conference (SEC2000) in Belgium in October 2000 in a talk entitled "Observing Eclipses Away from the Centreline" by Paul D. Maley of IOTA. While observing from the edge can give prolonged Baily's Beads and chromosphere, it strikes me that for the amateur eclipse chaser with not too many under their belt, it could prove a very frustrating experience with so short a duration of totality.

I was amazed when several experienced eclipse chasers, and tour group leaders queried my sanity in choosing to watch the 2001 eclipse from Madagascar. They said: not only is the duration shorter, but it is very low on the horizon. They were correct on both points, but the first point is easy to counter - it is my belief that all eclipses are of the same duration, they are all over far too quickly. I can assure you that a 7 minute eclipse lasts for the same time as a 2 minute one - in other words just few seconds!

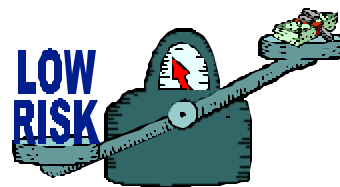
The second point (that of altitude) is actually both a good thing and a bad thing:

For:

- * sheer beauty
- * convenience of viewing
- * ease of photography
- * sunset/sunrise partial

Against:

- * cloud
- * seeing conditions



The 2001 eclipse was very fortunate in having the best weather prospects (after Angola) on the west coast of Madagascar, in fact at Morombe there wasn't a cloud in the sky the day before, during, or after totality.

Seeing a total solar eclipse with the Sun only a few degrees above the horizon, with the whole horizon, landscape or seascape in your field of view is indescribably beautiful. You do not have to crane your neck, you can see the people around you and their reactions at the same time as the totally eclipsed Sun. As the Sun sets (or rises) the atmosphere allows you to see the partial phases unaided, and is very pretty indeed.

All total solar eclipses start at sunrise, and end at sunset (there are strange ones that start and end at sunrise, but they are near the poles and can be ignored) therefore there is always a place you can go to see totality just before sunset, or just after sunrise. Some eclipse locations are more convenient than others of course.

Low altitude annular eclipses

Britain's next annular eclipse takes place on 31 May 2003 and is visible in northern Scotland. This eclipse is the first central eclipse in Saros 147. Coincidentally Britain's next in 23 July 2093 is the same Saros, but 5 Saroses later. Britain hasn't had an annular eclipse since 8 April 1921, which was visible also in northern Scotland. My book gives the track and details for all these. Experienced annular eclipse observers say that it is best to be near the edge of the track of annularity in order to have a chance of seeing Baily's beads and the chromosphere. In which case Scotland provides the best location provided there are clear skies, and late May has the best weather prospects. Unfortunately the odds are still stacked against clear skies at that hour of the morning, and I would rate the probability of seeing it as less than 10%.

Travelling to Iceland would make the Moon centrally placed inside the Sun's disc.

Sun's altitude for eclipses I have seen:

(Continued on page 21)

GENERAL TOPICS

Year	Local Time	Sun's Elevation	Duration	Location
1988	08:32	22(	2m 5s	Pankal Pinang, Bangka Island, Sumatra
1990	02:54	4(	1m 30s	Joensuu, Finland (total cloud cover)
1991	11:53	83(	6m 19s	Baja peninsular, Mexico
1994	08:19	31(	2m 53s	Tacna, Peru
1997	09:00	17(	2m 05s	Chita, Siberia
1998	03:33	48(	2m 41s	Half Moon Bay, Antigua
1999	10:12	46(	2m 02s	Falmouth, England (total cloud cover)
2001	16:27	13(	2m 24s	Morombe, Madagascar



Future eclipses with convenient low altitude viewing places:

14 Dec 2001	Annular	Costa Rica	11(	on west coast
10 Jun 2002	Annular	West coast of Mexico	0.3(	off coast of Baja 6.5(
4 Dec 2002	Total	Africa	18(- 47(	Australia 8.5(- 0(
31 May 2003	Annular	Everywhere	less than 4(
23 Nov 2003	Total	Antarctica	- less than 15(	everywhere
8 Apr 2005	A/T	Costa Rica/Panama	21(	then into Columbia and Venezuela
1 Aug 2008	Annular	China		
22 Jul 2009	Total	India		
13 Nov 2012	Total	Australia		

My book shows the track of all these eclipses. Together with colour pictures of low altitude eclipses in Montana USA in 1979, India in 1995 and Chile in 1994.

My Web sites of possible interest:

Details on my book "UK Solar Eclipses from year 1 to 3000" www.clock-tower.com/eclipse

Results from our group in Madagascar: www.clock-tower.com/eclipse2001

The world's leading eclipse chasers observation figures: www.clock-tower.com/chasers

Useful links to other eclipse sites: www.clock-tower.com/tse

2003 Annular Solar Eclipse - Facilities in Northern Scotland There follows a list of accommodation currently available. Prices are not given as they may be different in two years time, nor have I given details of facilities such as en-suite, smoking/non smoking etc. as these too are subject to change. It is also possible (even likely) that some of the places listed below will not be in business in two years time, and that others will have opened up.

There are websites for Highlands of Scotland Tourist Board (HOST) - they keep changing the name of their website; or www.letsгонorth.com which is subscribed to by a number of businesses in Sutherland and Caithness; or Vacations in Scotland website.

The code for all of Durness and surrounding area is 01971, from outside the UK dial 00 44 1971 followed by the number below.

LIST OF ACCOMMODATION IN DURNESS & SURROUNDING AREA

Bed & Breakfast, Guest Houses, Hotels.

* Brivard, Durine. Telephone: 511300

* Foinaven, Durine. Telephone: 511726

* Braemar, Sangomore. Telephone: 511284

(Continued on page 22)

GENERAL TOPICS

(Continued from page 21)

- * 3 Bard Terrace, Durine. Telephone: 511207
- * Torrun A Chuain, Sangobeg. Telephone: 511719
- * Lerin Cottage, Lerin. Telephone: 511315
- * Orcadia, Lerin. Telephone: 511366
- * Corrie Lochan, Durine. Telephone: 511341
- * Glengolly, Durine. Telephone: 511255
- * Port Na Con, Laid. Telephone: 511367
- * Cape Wrath Hotel, Keodale. Telephone: 511212
- * Parkhill Hotel, Durine. Telephone: 511202
- * Smoo Cave Hotel, Smoo. Telephone: 511227
- * Puffin Cottage, Durine. Telephone: 511208
- * Rowan House, Laid. Telephone: 511347
- * Choraidh Croft, Laid. Telephone: 511235
- * Smoo Falls, Smoo. Telephone: 511228
- * White Heather, Smoo. Telephone: 511251
- * Caberfeidh Guest House, Druimblhar. Telephone: 511215/511292

Hostel Accommodation:

- * Durness Youth Hostel, Smoo. Telephone 511244
- * Lazy Crofter Bunkhouse, Durine. Telephone 511209/511366

Self Catering:

- * Glengolly (Static Caravan), Durine. Telephone: 511255
- * Residential Caravan, Sangobeg. Telephone: 511363
- * Church End Chalets, Sangomore. Telephone: 511350
- * Sango Bay Cottage, Sangomore. Telephone: 01737-355740
- * Rowan House (Static Caravan), Laid. Telephone: 511347
- * Norsehaven Cottages, various locations in Durness. Telephone: 01732-882320.

Camp Site:

- * There is a camp and caravan site on the headland at Sangomore. The campsite is owned by the same person who owns Sango Sands Oasis Bar and Restaurant. The phone number of the Sango Sands is 511222.
- * There is also good quality accommodation at Rhiconich (14 miles away), Kinlochbervie (19 miles), Melness (30 miles) and Tongue (30 miles).

Facilities available in Durness:

Restaurants/cafes:

- * Loch Croispol Bookshop & Restaurant, Balnakeil. Telephone: 511777
- * Balnakeil Bistro, Balnakeil. Telephone no. unknown
- * Sango Sands Oasis, Sangomore. Telephone: 511222
- * Port Na Con House, Laid. Telephone: 511367
- * Cape Wrath Hotel, Keodale. Telephone: 511212
- * Smoo Cave Hotel, Smoo. Telephone: 511227
- * Choraidh Croft, Laid. Telephone: 511235

- * White Heather Cafe, Smoo. Telephone: 511251

Public houses:

- * Sango Sands Oasis, Sangomore.
- * Cape Wrath Hotel, Keodale.
- * Smoo Cave Hotel, Smoo.

Shops:

- * R. Mackay & Sons, Sangomore (Licensed Grocers, Post Office, Lottery, Petrol, Coal, Gas, Bank of Scotland cash machine, etc).
- * Mathers Mini Market, Sangomore (Off license, Fruit & Veg, Confectionery, etc).
- * Loch Croispol Bookshop & Restaurant, Balnakeil.
- * Studio 17, Sangomore. (Home Made Wines, Candles, and other gifts).
- * Balnakeil Craft Village, Balnakeil. A variety of different craft shops of varying quality. The most notable include Far North Ceramics (Lotte Glob), Printmakers (Ishbel MacDonald) and weaver (Jean Addison-Fitch).

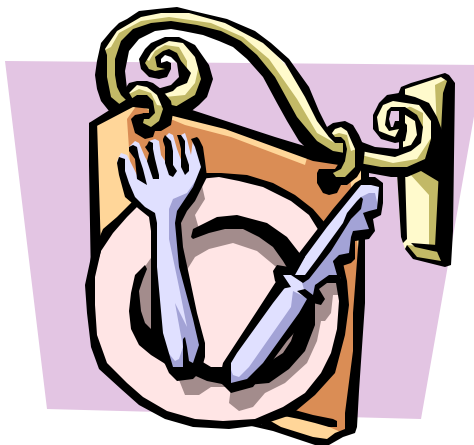
There is also a doctor's surgery and health centre (with nurses, and occasional visits from optician and dentist). There is a mobile bank (Royal Bank of Scotland) that visits Durness once a week (Tuesdays between 11.15am - 12.45pm). Once a fortnight, a vet visits Durness. There is a local police constable based at Rhiconich, and there is a fire crew based at Kinlochbervie.

There is also a Golf Course at Durness, if any of you are golfers. The 9th hole involves hitting the ball across a stretch of the Atlantic Ocean!

The Village Hall (currently Durine, but shortly to move to new premises at Druimblhar) holds regular social events.

Should any of you have the time, there is also plenty of fishing available, lots of bird watching sites (May is a very good time for bird watching), and some excellent walking and mountain climbing. Some people also go surfing. Whales, seals and sea otters can also be seen.

Sheridan Williams 10 August 2001



GENERAL TOPICS

From : KCStarguy@aol.com

JOURNALISM DISAPPOINTMENT

I am disappointed in the eclipse coverage by both s&T and Astronomy. Both just covered there trips. Astronomy this time at least had a story eventhough it was there trip. S&T has a Espenak's nice tree in the foreground. Seems like he had the same idea I had and it looks somewhat similar to my shot in Astronomy (accept they cut out the people I had in the foreground which I thought made it more interesting).

They both used to have glorious accounts and pics?

Do you think they don't cover as much due to internet, web-sites and listserves like this one or is it that they don't want to devote ad space? They cover comets, meteors and more . any feedback about this? Dr. Eric Flescher

From : "Vic & Jen Winter, ICSTARS Inc." <webmaster@icstars.com>

I tend to agree with the downplay of the 2001 eclipse coverage, but I tend to think there was method in their madness. I can't believe I'm going to stick up for the industry giants, but I am.

Were I the editor of a publication which needs to plan out far in advance (as a matter-of-fact I am), I would need to forecast what our staff might expect in photo and news submissions both from staff writers and outside submissions. We all saw going into the African eclipse, that the size of the audience was much smaller... and the size of the accepted baggage allowance was greatly restricted. This would lead me, as an editor to believe that submissions and coverage would be poor related to the number of witnesses, the quality of equipment able to make the trek to image, and the time required to return, process and submit images for the publication. Each magazine also maps out the content months in advance so that advertisers can be notified what each issue will cover (to coordinate ad campaigns).

I wouldn't "bill" much space in my editorial section for it... unless I had a great deal of flexibility in publishing. Sky & Telescope and Astronomy Magazine don't have a lot of flexibility in production. It takes a lot of time to get those pages allocated, designed, filled, output, printed and distributed. Their inclusion of prints in the Hot Shot section was likely all the schedule could afford. I seem to remember their solution to be a large spread AHEAD of the eclipse to hype the event.

Vic and I are much luckier as Editors in production of the quarterly Astronomical League Reflector. Our production

times are slightly shorter and we have a smaller page-count to organize so far ahead. This is why we were able to dedicate the double-page color spread to the event for our August Edition.

I hope everyone who received his/her copy enjoyed it. For those who don't receive a copy... it is the free publication of the Astronomical League mails to all members through a local League associated club, and for Members-At-Large. Join a club... or get your club to join the League. The benefits are much larger than our cool, stylish amateur-oriented publication. Clear Skies, Jen Winter

* We have so far received only 1 photo submission from the eclipse. We run a photo gallery of contributed submissions in every issue. Vic and I would love to have more submissions for the November issue. Submissions and correspondence should be directed to: Vic & Jen Winter: Reflector@icstars.com

From : KCStarguy@aol.com

Yes I know that both magazines need to have a 3 month lead time and all that. I really think that it is a shame that they don't make an effort to publish more about it except for their trips. Like I said S&T and Astronomy used to have many accounts and photos which were really nice. Jen and Vic do a nice job with the Reflector. But I still think the major mags should do a better job of covering nature's greatest spectacle.

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

Jen Winter mentioned that perhaps the editors thought the quality of eclipse photos would be lower because of fewer people going to the eclipse and the luggage restrictions placed on them due to airline limitations.

Quality is clearly not the case if you scan the many eclipse web pages dedicated to the 2001 eclipse, Jen and Vic's pages included. There is a dedicated community of eclipse chasers that manages to get fantastic photos at every eclipse no matter where it is. I'm sure that the magazine editors are aware of this.

I think the real issue is the level of reader interest in this particular eclipse. Remember that the 1998 and 1999 eclipses were much closer to home for ASTRONOMY and S&T readers. Naturally, those eclipses enjoyed a far larger attendance as well as greater reader interest, so the magazines devoted much more coverage to them. In contrast, 2001 was much further away and a much more expensive trip. And many people are afraid to travel to Africa.

(Continued on page 24)

GENERAL TOPICS

I expect that the 2002 eclipse will receive similar coverage (or lack thereof) for the same reasons.

>Jen and Vic do a nice job with the Reflector.

Indeed! Jen and Vic have brought the Reflector into the 21st century. They are to be congratulated on producing such a great looking journal. If you are not a member of the Astronomical League, it is worthwhile joining if for no other reason than to enjoy the Winter's work on their quarterly publication. For details and info, see: <<http://www.astroleague.org>><http://www.astroleague.org> Fred

From : Bill Kramer <bill@autocode.com>

More to the point would be the question of how one story about a trip to southern Africa would differ from another in the eyes of a "typical" reader. Those of us that were lucky enough to go would notice the differences and have the frame of reference to appreciate them. But other readers might not.

I'm sure all the astronomy publications were flooded with pictures and stories after the eclipse (one of many reasons I didn't bother to send any) from those wanting to share the experience with others. That made the job of selecting which to share a rough one. The selections in the gallery of pictures were great and I am looking forward to seeing more over the next several months (we hope).

And keep those solar eclipse web page "sightings" coming! It is fun to read other's accounts. -Bill Kramer

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

Maybe part of the reason the mags didn't cover expeditions other than their own is that nobody sent them any input. Maybe everyone felt like everyone ELSE was sending in reports, so they didn't send in reports of their own. I didn't send a report to any of the mags, so I guess I should not expect them to cover my trip. Jim Huddle

From : Hal Couzens <hal@dneg.com>

Yeah, these mags are probably wondering why on earth hardly anyone goes to see eclipses...

Hands up those who submitted their tales yet did not get anything in print (both of my hands are firmly on the floor - more fool me) Hal

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

Maybe true as well, I did not send anything in either. I also noticed that S&T and Astronomy coverage for 1999 was very poor. As far as I remember, they published briefly their editors reports.

PS: The July Special (about the 2001 TSE) is ready is ready to go. Best regards, PP

From : Mike Simmons <msimm@ucla.edu>

I sent a report to S&T from Iran on the 1999 eclipse. I wouldn't have been surprised if they included a different report from the region instead but I was a bit dismayed to see that they completely ignored that whole stretch of the eclipse path. It seemed like the eclipse ended near its midpoint in the Black Sea. I believe there were other reports submitted from east of the Black Sea, too. I think they might have had one from cloudy India but not from the sunny and well-attended Middle East. Mike Simmons

From : "Vic & Jen Winter, ICSTARS Inc." <webmaster@icstars.com>

Prof. Huddle is absolutely right. I talk to photographers and eclipse trip participants all the time, soliciting material, and I receive a similar response very frequently to the comments below.

Submit your work, submit it somewhere else, then submit it again!

Whether we are looking at a flood of submissions in eclipse pictures (which I doubt) or not, you should still submit your work. Maybe yours won't be the first photo or report, but it may happen to appeal to an editor and contain the element he/she wishes to cover. Your submission could be selected to run for a lot of different reasons than you think. You should also submit your work with the knowledge that the 'hot-topic' is going to fade, and the submission reservoir will be pooled for years to come in further articles and editions. For example, this spring, we received a run on Aurora photos. We couldn't run every aurora photo which was submitted, but we tried to include a wide variety. In further issues, when submissions are low and we need to fill space, those additional aurora shots may appear after all. We can also reference them for an article later. - particularly a submission which came late and wasn't included for time constraints.

Also, as an editor, we are much more likely to run images which are sent to us, that are of a large digital size or as an original print. We are less likely to visit suggested websites where pictures are posted, select a photo from that

(Continued on page 25)

GENERAL TOPICS

site, make second contact requesting a larger file; and wait for photos to arrive in a good format. While it may be rude to attach a large file to an e-mail in many circles, it is less offensive to photo editors. It is also certainly acceptable to mail a disk, and/or a photo print of your image to the editor. We are happy to scan images mailed from a print. You don't need to be an electronic imaging expert to have your work considered either. Just Send Something! Clear Skies, Jen

From : "Ted Saker Jr." <ted@saker-law.com>

I think it has more to do with the magazines avoiding giving competing tours any free column space. I'm afraid in the end it's simply a matter of flogging their own expeditions in order to get people to sign up for their "official" trips instead of giving their money to non-sponsored operators.

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

Jen Winter has suggested, "Submit your work , submit it somewhere else, then submit it again!"

Never having submitted work to a magazine like "Astronomy Now" or "Sky & Telescope," I didn't know what the rules of ethics say about this. I DO know that when it comes to professional scientific research journals like "Physical Review" and "Naturwissenschaften," it is considered unethical to submit the same paper to two different journals. If Journal A rejects your work, you may then submit it to Journal B for their consideration, but you're not supposed to send it to Journal B unless Journal A rejects it or unless you withdraw it from Journal A first. "Astronomy," "Sky & Telescope," and "Astronomy Now" are NOT professional research journals, so I don't necessarily expect the same rules to apply. Occasionally, I have indeed seen the same photo appear both in Astronomy and in S&T, but that doesn't mean it is ethical.

Since I didn't know, I called the editorial departments of "Astronomy" and "Sky & Telescope," and asked if it was allowed for someone to submit a photo to more than one mag. "S&T" said, "I don't see why not." But Astronomy said that while it is OK to submit PHOTOS to more than one magazine, it is not OK to send ARTICLES to more than one mag. I guess the bottom line is that Jen's advice is good, but if there is the least doubt in your mind, check with the editorial staffs of the magazines concerned.

And note that both S&T and Astronomy actually PAY YOU if they print your photo, so get out there and send in some eclipse photos! Jim Huddle

From : "Vic & Jen Winter, ICSTARS Inc." <webmaster@icstars.com>

Thanks, Fred, for your favorable report on our work with the Reflector. We appreciate such kudos' from reputable sources.

My issue with attempting to anticipate reporting of the 2001 eclipse was to estimate the Quantity of submissions, rather than the Quality of submissions. - as well as a concern over meeting deadlines (with long travel times) to allow inclusion into editions still timely to the June event.

There are three major types of periodical publications in print. News coverage of breaking events, professional journals and papers, and trade publications updating readership about issues relating to a topic.

Sky & Telescope and Astronomy have the luxury, as trade magazines, of reporting on a topic which (in a manor of speaking) doesn't move or happen very quickly. Unlike many other news mediums, Astronomy doesn't typically require live reporting of public or private events as they happen - such as sports, politics or 'current events'. Therefore the production staff of a 'trade rag' have the luxury of mapping out editions months in advance, never needing to produce content quickly. Unfortunately, when a live coverage event occurs, it is harder to include a report quickly AFTER the event, than to report on the predictions in ADVANCE.

It would be the nature of the production method to include a lower quantity of reporting after the event. Can anyone reference other instances where these publications have reported on in great detail, quickly after the event occurred. (not a tiny inserted blurb, but a full spread?) - A surprise comet discovery or breaking news event?

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

Why should magazines be worried about promoting other people's tours when the tour is already over? Come to think of it, why would anyone want to go on a tour anyway? I always travel under my own steam if I can and it is much more satisfying. Incidentally, astronomy magazines STILL don't publish any of my pictures - and only one in four even acknowledged receipt. Local magazines in the non-astronomy category are much nicer to deal with. Three magazines published 9 pictures between them - AND paid for them too! Cliff

From : "Vic & Jen Winter, ICSTARS Inc." <webmaster@icstars.com>

I have no experience working with professional scientific

(Continued on page 26)

GENERAL TOPICS

research journals. Our experience is in the news and trade magazine industry. Industry is an important word, because each entity is oriented as a for-profit business. Scientific & Research journals are not a for-profit industry for the publisher.

In the trade magazine industry, a (non-staff) submission typically has no stipulations or ethics attached to submissions to multiple publications. Particularly in the category of 'Gallery Submissions', 'Hot Shots' etc. These photos are (usually) accepted on a per-piece basis. Photos which run accompanying editorial articles are of a different nature, and usually are done so under contract between the photographer/writer and publisher. This can be a staff contract, a per-insertion contract etc. 'Gallery' style inclusions are good for a magazine and for readership. It provides a good supply stream of interesting material to include in each issue for the publisher, amateurs have a forum, and readership is boosted.

In the news industry, it is uncommon that an amateur submission is run at all. A large structure for the contracting, sale and distribution of content exist for a great deal of material used. No photo is run without some kind of standing contractual agreement.

In some instances, with a valuable news photo (a hot political topic for example) the contract will entail an exclusive rights agreement. This contract (and exorbitant price tag) prevents the photographer or writer from selling his product to another news customer. Exclusives are very rare. Photographers and writers in the News and Magazine industry are able to sell a photo to as many clients as they wish.... this is how photographers make their living. Clear Skies, Jen

From : KCStarguy@aol.com

I don't see that other tours have to be mentioned at all in material that was submitted to the mags concerning the eclipse. The lack of coverage of the 1999 eclipse was most puzzling and I guess really started the trend. 1998 was not too bad though.

From : KCStarguy@aol.com

They actually pay us if they print the photos? I did not know that. Interesting. Are you sure?

I have found in the past that submitted articles, stories etc to more than one magazine is not considered good business in the publishing industry. I have submitted activities that were published in magazines and journals after they have been published in a targeted journal magazine at first. Many do

not want to be part of multiple submissions and caution against that.

Pictures that is another story. I don't think either magazine wants the same photo to appear in the competition's mag.

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

Publications should certainly pay you. If your images are good enough to use, and draw customers, they are good enough to pay for. You are correct in the assumption that it is 'incorrect' to do multiple submissions, as magazines like to have first rights. However, different images of the same subject should be no problem.

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

Yes, if your photo is of high quality, you certainly should get payment for publication. State your own requested fee, or ask the magazine what they use as a standard fee.

As for multiple submissions: I see no 'ethical' problem in submitting the same photo to different magazines, as long as you do it at the same time, and make clear to everyone that you have send your photo to the competitors as well. If the photo is of extraordinary quality, a number of magazines might want to publish it (just like they all publish the same Hubble Space Telescope photos). If, on the other hand, the photo is not 'something special', a magazine may not want to publish it if they run a risk that the competitor will use it too. So it may be wiser to submit very different photos to competing magazines, say, a nice coronal shot to one magazine and a multiple-exposure wide-angle shot of the full course of the eclipse to the other. --Govert

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

Apparently they do, typically 20 bucks or so per picture. But you have to be patient! After being among the successful observers of the 1992 ring-of-fire-sets-in-the-Pacific annular eclipse I sent prints of my photographs to about every magazine I knew of - some ignored them, some printed them right away (one even on the cover), and some put them in their files, to use them much much later. E.g. last year Astronomy printed one of the pictures AND sent me a cheque as well.

On the other hand one of the magazines apparently SOLD my pictures to a picture agency, without telling me - and one ended up on the cover of a nature book I found by pure chance in a U.S. bookstore much later. I've never found out what happened (and never got paid, of course).

(Continued on page 27)

GENERAL TOPICS

Regarding the possibility of getting STORIES into major magazines, I've been successful a couple of times with S&T - when they were still compiling big articles from all the material they got. Typically they quote a few sentences from your letter, mostly about unusual events. And the more remote the eclipse was, the higher the chance for you to get exposure: S&T devoted quite a bit of space to my adventures in Siberia in 1997 ... Daniel

How about this one for reverse ethics?

A photographer-journalist-author from UK visited the Cederberg Observatory in South Africa to do some work. He was apparently impressed with what he saw and on his return he wrote to an astronomy magazine in USA asking if they would like an article with a couple of pictures. The Editor(who knew the author personally) said "Yes" and the article was duly completed.

It was sent to me to check for accuracy of text and picture captions and I

made a couple of very minor amendments. The contribution was then sent to the magazine - and then there was deadly silence!

An enquiry some 10 months later brought the reply that they had decided to use the article, but wanted it brought up to date. Once again it came back to me and I supplied revisions as some changes had been made at the amateur run observatory. Again it went to the magazine, and nothing has been heard since. That was about five years ago.

Anyone interested in the observatory can find all details at: www.cederbergobs.org.za which also displays four of my 2001 June 21 TSE photographs. Cliff Turk

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

If you still have the original picture, I would institute a copyright action against the publisher of the book and the magazine. As the original author, you retain copyright unless you specifically sign it away. The original picture will be necessary to show proof of authorship.

From : "Joseph Cali" <joe_cali@hotmail.com> To : SOLARECLIPSES@AULA.COM Subject : Re: [SE] Publishing in magazines and professional journals? Date : Thu, 13 Sep 2001 21:02:08 +1000

Almost all magazines and journals have submission guidelines that are very easy to obtain. The guidelines or info on how to obtain them is found in the masthead. The masthead

is the column, usually located near the front of the magazine that identifies the publishers, editors and staff.

Most professional journals (Science and Nature) make you assign the copyright to the publisher before they will publish your paper. We in the professional research community are in the ridiculous position of not being able to freely re-publish our own research on our web sites or elsewhere without permission from the publishers. In theory, we are even supposed to get their permission before talking about the work at a conference and showing slides with the data as published in the journal. To give them credit they usually give permission after the journal has printed it. One other mechanism professional journals use to prevent cross submissions is to have very specific and quite different format requirements. After having a paper rejected from Science, a colleague and I had to rewrite and re-format the body and references substantially before submitting it to Nature where it was finally accepted and published.

Popular and hobby magazines are a totally different kettle of fish. Your work doesn't have to go out to review. You "just" have to get it past the editors. Astronomy and S&T fall into this category. They are not "peer reviewed journals." Some magazines in this category want exclusive world rights some only want exclusive first publication rights in their target country. Write to the magazine or request a set of "submission guidelines." If you write for guidelines, be sure to send them a stamped self-addressed envelope. Some may have them on their web site if they have one.

S&T have their guidelines on their web site at <http://www.skypub.com/skytel/authorguide.html>

After seeing the submission guidelines, it never hurts to contact the editor to find out if they are interested in publishing your article. A hypothetical example, you might have a great article on the mating habits of the spotted Jamaican frog for Nature Enthusiast Magazine but the issue that is just about to be published is their annual special issue on frogs and they don't want any more frog stories for a while. Sometimes there is a conflict with advertising priorities that necessitate rejecting articles. Don't take it personally; do listen to comments if given. When contacting editors look at the masthead. It often tells you their preferred method of contacting the editor.

When submitting photographs to a publisher ALWAYS

- Send professionally made duplicates NOT originals.

(Continued on page 28)

GENERAL TOPICS

(Continued from page 27)

- Slides in preference to prints or negatives unless unavoidable. Negatives can be digitally duped and written to slide at any good professional lab.

- Label every slide mount or print with "return to" followed your name and mailing address

- Send them a stamped self-addressed envelope with sufficient return postage for your images.

- Edit your work ruthlessly. Don't send sub-standard work or you will be rejected immediately. A few top quality images will impress much more than a few top quality images scattered amongst hundreds of mediocre ones.

I have no experience publishing in S&T or Astronomy magazines. After eclipses I usually travel around for 4-8 weeks. Someone once told me, tongue firmly in cheek that you have to send your images to S&T at least one week before the eclipse if you want to have any chance of getting your work published. I never get home until it's much too late.

I find it remarkable that two magazines that purport to cover the universe won't devote significant space to events that take place at enormous distances from the Earth unless the observations happen to be made from within the bounds of one particular country. Do they think that the readers will fall off the edge of the flat Earth if they publish observations from too far afield? :-)) I agree they certainly don't publish a lot of non-American content but they do publish some. I suspect that the content probably reflects the proportions that they receive from American / non-American contributors with a little editorial bias thrown in.. Joe Cali

rom : KCStarguy@aol.com To : SOLARECLIPSES@aula.com
Subject : [SE]

eclipse sightings Date : Sun, 16 Sep 2001 12:22:45 EDT

fyi from Dr. Eric Flescher (KCStarguy@aol.com) other eclipse sightings are found at <http://members.aol.com/kcstarguy/blacksun/eclipsesightings.htm>

New stamp put out by the US postal service F. Exploring our Solar System issued 7/11/00 Souvenir sheet \$5.00 # 108100

Shows a pictures of Saturn and moon and earth insert not clear in the upper left. On the bottom ins a pentagon with 5 graphics in it. sun in xray showing a great prominence, another shot of sun, one of earht and clouds, another not sureand a picture of an eclipse sun with yellowish corona. Also said is "these five \$1` postage stamps are the first pentagonal stamps ever issued by the US postal service. They required special perforated dies ot create their innova-tive shape.

For foreign orders you have to do the following can be made by credit card, international money order, check preprinted to us funds. Foreign currency are not acceptable. Add \$5 for shipping and determine shipping and handling charges (may require registered mail certain places - check with local authorities).

visit www.stampsonline.com fax 816-545-1212 or call 816-545-1000

stamp fullfilliment services POBox 7247 Philadelphia, PA 19101-7097

rom Bob Morris To SEML Date 20 September 2001 RE
On topic

From: The New Yorker, Sept 24, 2001. p. 27
"The umbra of personal grief already encompasses scores or even hundreds of thousands of people; a week or two from now, when the word has spread from friend to colleague to relative to acquaintance, the penumbra will cover millions."
Hendrik Hertzberg

From Robert Slobins TO SEML Date 27 September 2001
RE Slit defraction

Message text written by Pasachoff: The October 2001 issue of Popular Photography (its Web site is www.pophoto.com) has a piece comparing the Sony Cybershot DSC-S85 still camera (resolution up to 1380x1340) with the Sony Handycam DCR-TRV30 camcorder (800x750). It also recommends the new Fuji Provia 400F, whose grain is the same as the Provia 100F. It costs twice ordinary films, though. Jay Pasachoff
How is the contrast of the 400F? When I shoot H-alpha prominences, with ISO 50 Velvia the exposure is 1/11. I could get away with 1/90 with ISO 400, possibly freezing the atmospheric turbulence.

I would still worry about latitude and spectral response.
Robert B Slobins

GENERAL TOPICS

From : FRED ESPENAK <u32fe@lepvax.gsfc.nasa.gov> To : SOLARECLIPSES@AULA.COM Subject : [SE] **Solar Eclipses of Historical Interest** Date : Fri, 28 Sep 2001 13:47:40 -0500

Now that the NASA 2002 eclipse bulletin is finished and off to the printer, I have a little spare time to update my web page "Solar Eclipses of Historical Interest."

I have doubled the number of eclipses on this page and I also added links to tables of eclipse path coordinates. This allows you to plot any of these eclipses on higher scale maps.

Please take a look at the updated page at:

<http://sunearth.gsfc.nasa.gov/eclipse/SEhistory/SEhistory.html>

I would appreciate it if you let me know of any corrections or bad links.

Also, please let me know if you have any suggestions for any additional eclipses of historical interest. Thanks, - Fred Espenak

From : FRED ESPENAK <u32fe@lepvax.gsfc.nasa.gov> To : SOLARECLIPSES@AULA.COM, eclipse@hydra.carleton.ca Subject : [SE]

NASA 2002 Eclipse Web Site Date : Wed, 5 Sep 2001 16:25:22 -0500

Greetings eclipse chasers - I know that many of you are eager to begin planning your next expedition into the Moon's umbral shadow. The manuscript for the NASA eclipse bulletin covering the total solar eclipse of 2002 December 04 is finished and is being converted into Pagemaker format before going to publication. I expect that it will be completed and ready for distribution in early October.

In the meantime, I have just made a major upgrade to my NASA 2002 eclipse web site. All the figures/maps from the 2002 bulletin and many of the tables are now available online at:

<http://sunearth.gsfc.nasa.gov/eclipse/TSE2002/TSE2002.html>

Here, you will find some high resolution maps of the eclipse path plotted on the Digital Charts of the World.

Many of you have been eager to read the weather prospects report that Jay Anderson prepares for the NASA eclipse bulletins. Your wait is over! It's all there on the NASA 2002 eclipse web site.

There is also some material which would not fit into the 2002 bulletin so it is only available via the NASA 2002 eclipse web site. Examples include extended versions of the path and grazing eclipse coordinate tables, as well as limb profiles and skymaps for Australia.

Of course, the complete eclipse bulletin will become available online in about a month or so. I'll make an announcement when it happens.

Please let me know of any problems (typos, bad links, etc.) Thanks, - Fred Espenak (So now you know how I spent my Labor Day weekend!)

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

Hi Fred, In your East Africa map, the Zimbabwean town of Bulawayo has lost its last "o" Cliff

GENERAL TOPICS

From : "Vic & Jen Winter, ICSTARS Inc." <webmaster@icstars.com> To : SOLARECLIPSES@AULA.COM Subject : Re: [SE]

2003 Total Solar and Total Lunar Date : Tue, 18 Sep 2001 11:14:48 -0500

One question....

I was speaking last week with good friend, and published mathematician umbraphile about 2003. I pointed out that the long 2003 eclipse programs would fall under both a total solar AND a total lunar eclipse.... with the total lunar eclipse falling on Nov 9th 2003 and the total solar eclipse falling on November 23rd 2003.

He disagreed that a total lunar and solar could possibly occur only 1/2 phase apart. It took a reference from the Eclipse Cannon before he believed what I was reporting. His understanding was that this occurrence was not possible in the same lunar phase cycle - "It's textbook!" he said. Just how rare is this occurrence? How long has it been or how long will it be again before the two events occur under within 14 days of each other. Does anyone have a record of this in their archives? Clear Skies, jen

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

Based on Fred Espenak's detail of solar and lunar eclipses from 2001-2010, it is not that rare for a total lunar and central solar eclipse in the same "eclipse season." It occurs both seasons in 2003 and again in February 2008. The other 2 solars are annulars, though, and all 3 central solars are in polar regions. It is likely that all 3 of these pairs would recur together in successive Saros cycles. There was also a total lunar eclipse 14 days after Glenn Schneider's famous expedition of 3 Oct. 1986 and there will be another 14 days after 20 Mar. 2015.

The central solar needs to be somewhat distant from the node in order for the lunar 14 days before or after to be total. Total lunars are probably fairly common paired with very high latitude solars, and are likely impossible if the solar is at medium or low latitude. I think the central solar is somewhat more likely to be annular than total, but I'm sure there are others on the list who can address that point better.

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

2008 gets an annular solar (Antarctica) plus total lunar pair, but the second pair is a total solar (arctic) and deep partial lunar. You will note that the total solar starts in the high Arctic but finishes way south, in China. Thus the lunar eclipse can't make it all the way inside our shadow, it will only be a partial, though a deep partial. Klipsi

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

I think that "normally" a total solar eclipse is "always" preceded - or followed - by a lunar eclipse which is only partial (or even penumbral), and vice-versa a partial solar eclipse will be preceded or followed "always" by a total lunar eclipse. Check it out: for example the year 2000 had partial solar eclipses "associated" with total lunar eclipses, etc. And just recently the June 21 total solar eclipse was again followed by a partial lunar eclipse, etc. etc.

but, as always, there is an exception !

the exception occurs when the central solar eclipse (total or annular) occurs in the high arctic or antarctic areas. In other words, when the moonshadow almost misses Earth. In that case we will have 2 central eclipses. In 2003 we actually get 4 central eclipses: 2 total lunar and 2 central solar (one annular, one total).

In 1997 we ALMOST had the same: a total solar eclipse in early March, in Siberia and Mongolia, followed by a almost-total lunar eclipse 2 weeks later. You will also note that if we have a partial solar, then the associated total lunar is of long duration and well into the center (see 2000). But in 2003 the duration of the lunar totality will be quite short.

I call these "near-miss" eclipses. :-)

2008 again gets a high arctic total and antarctic annular solar. Check out the associated lunar eclipses !

From : Jean Meeus <JMeeus@compuserve.com>

How often do a total solar eclipse and a total lunar eclipse occur at an interval of half a lunation (about 15 days)? I found no less than 11 cases during the period 1951-2050 :

(Continued on page 31)

GENERAL TOPICS

1957 Oct 23 solar non-central total
 1957 Nov 7 lunar total

1967 Oct 18 lunar total
 1967 Nov 2 solar non-central total

1968 Sep 22 solar total
 1968 Oct 6 lunar total

1985 Oct 28 lunar total
 1985 Nov 12 solar total

1986 Oct 3 solar annular-total $\gamma = +0.99$
 1986 Oct 17 lunar total

2003 Nov 9 lunar total
 2003 Nov 23 solar total $\gamma = -0.96$

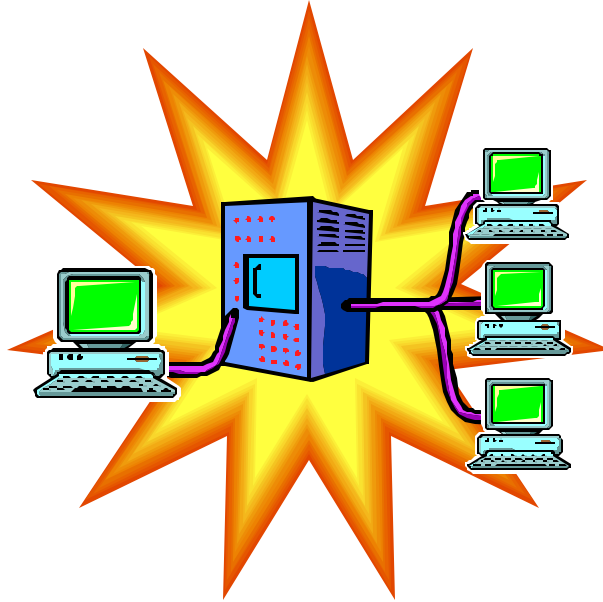
2015 Mar 20 solar total
 2015 Apr 4 lunar total

2033 Mar 30 solar total $\gamma = +0.98$
 2033 Apr 14 lunar total

2043 Mar 25 lunar total
 2043 Apr 9 solar total non-central

2044 Aug 23 solar total $\gamma = +0.96$
 2044 Sep 7 lunar total

2050 May 6 lunar total
 2050 May 20 solar annular-total



So, those "events" are not that rare, although it must be said that often the solar eclipse is a "limiting" case. In 3 of the 11 events, the solar eclipse is a NON-CENTRAL total. In two other cases, the solar eclipse is annular-total. In some other cases, Gamma is only slightly less than 1 (in absolute value), so the total eclipse occurs at high latitude. (Gamma is the least distance from the axis of the lunar shadow to the Earth's center, in units of the Earth's equatorial radius).

The question asked was about the occurrence of a total lunar and a TOTAL solar eclipse during the same eclipse season, NOT of a total lunar and a "central" solar. Consequently, the case of February 2008 mentioned by Jen Winter is not a valid one, as the solar eclipse of 2008 February 7 will be annular, not total. Jean Meeus

From : Evan Zucker <ez@AbacusTotality.com>

What is a non-central total eclipse? -- EVAN

From : "Vic & Jen Winter, ICSTARS Inc." <webmaster@icstars.com>

My original question I posed was actually in reference to the Nov 9 and Nov 23 2003 Total Lunar and Total Solar case, not 2008. I was also specifically interested in the frequency of two totals at the +/-15 day interval.

From : JohnLX200@aol.com

When the shadow axis doesn't touch Earth, but some part of the umbral cone does.

This obviously only happens near the poles, or more precisely, near where one of the two planes parallel to the ecliptic and

(Continued on page 32)

GENERAL TOPICS

tangent to Earth, is tangent to the Earth. Or if you want to get REALLY precise....well, never mind, I'm sure you get the idea.

Equally obviously, the eclipse would be central at some altitude(s) above a particular point(s) on the Earth's surface, but then again, that's true all the time. So I guess it's reasonable to call a solar eclipse central if and only if the axis reaches the surface of our planet. John Hopper

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

This one puzzled me too. I gather it's a total eclipse with no center line.

>From <http://meltingpot.fortunecity.com/melwood/368/eclramx.html>: Sometimes the umbra just misses the Earth, but a portion of our planet still lies within the penumbra - experiencing a partial eclipse. On rare occasions the umbra can just graze the Earth - but without the axis of the moon's shadow-cone ever intersecting the surface of our planet: such eclipses are termed "total but non-central". Don

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

When the shadow axis does not touch the earth's surface. --Robert B Slobins

From : Glenn Schneider <gschneider@mac.com>

Only three non-central total solar eclipses have occurred in the last century: 19 May 1928, 23 October 1957, and 02 November 1967. The second of these, occurred over the Antarctic during the International Geophysical Year, and only 19 days after the USSR launched Sputnik I. The umbral axis was 33km "above" the surface of the Earth at closet approach, whereas the radius of the umbral cone at that point was 37km, so a 4km "deep" sector of the umbra hit the Earth. The path of totality went over the Weddel Sea. Given this was at the height of the IGY, and the epoch first international co-ordinated assault on Antarctic science, I have always wondered if anyone had seen this eclipse. Does anyone here know?

As a related point of interest, the solar eclipse preceding this one by 6 months on 30 April 1957 was ALSO a non-central eclipse - but this time an annular. For this eclipse gamma was 0.999 (!) Now THAT is a close call!

The NEXT non-central TOTAL will be on 9 April 2043. Interestingly this one will be FOLLOWED 6 months later by a non-central annular on 03 Oct 2043 - the same date, but not the same Saros as the very interesting annular/total (hybrid) eclipse of 1986. http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_86/ECLIPSE_86.html I hope to be around for both of those!

This, however, is not the next non-central eclipse. That honor falls to the annular of 29 April 2014, but 9 April 2043 is the next TOTAL non-central solar eclipse.

From : Glenn Schneider <gschneider@mac.com>

As a matter of idle curiosity, I have computed forward after the non-central Total of 9 April 2043 and found that another non-central Total will not occur after that until 1 June 2459 (!) That's more than four centuries without a non-central total!

This certainly could be, but could F. Espenak, J. Meeus, or someone else confirm I haven't a bug in my S/W? This seems an odd finding.

From : Michael Gill <eclipsechaser@yahoo.com>

Glenn, Using Fred's Five Millennium Catalog of Solar Eclipses...

<http://sunearth.gsfc.nasa.gov/eclipse/SEcat/SEcatalog.html>

...I can find no non-central total eclipse between 2043 and 2459. Cheers, Michael.

From : "F.Podmore" <podmore@science.uz.ac.zw>

So, you eclipse hunters, when were the previous non-central totals? Start wherever you like. Francis.

(Continued on page 33)

GENERAL TOPICS

From : Glenn Schneider <gschneider@mac.com>

Francis, I previously posted this but under a reply to "Re: [SE] 2003 Total Solar and Total Lunar" I'll repeat it under this thread as it may have been missed there (sorry, Patrick):

Only three non-central total solar eclipses have occurred in the last century: 19 May 1928, 23 October 1957, and 02 November 1967. The second of these, occurred over the Antarctic during the International Geophysical Year, and only 19 days after the USSR launched Sputnik I. The umbral axis was 33km "above" the surface of the Earth at closet approach, whereas the radius of the umbral cone at that point was 37km, so a 4km "deep" sector of the umbra hit the Earth. The path of totality went over the Weddel Sea. Given this was at the height of the IGY, and the epoch first international co-ordinated assault on Antarctic science, I have always wondered if anyone had seen this eclipse. Does anyone here know?

As a related point of interest, the solar eclipse preceding this one by 6 months on 30 April 1957 was ALSO a non-central eclipse - but this time an annular. For this eclipse gamma was 0.999 (!) Now THAT is a close call!

The NEXT non-central TOTAL will be on 9 April 2043. Interestingly this one will be FOLLOWED 6 months later by a non-central annular on 03 Oct 2043 - the same date, but not the same Saros as the very interesting annular/total (hybrid) eclipse of 1986. http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_86/ECLIPSE_86.html I hope to be around for both of those!

This, however, is not the next non-central eclipse. That honor falls to the annular of 29 April 2014, but 9 April 2043 is the next TOTAL non-central solar eclipse.

From Jean Meeus

On 2141 January 8 there will be a non-central ANNULAR solar eclipse. But then, yes indeed, there will be no non-central annular or total solar eclipse until the year 2459. This is mentioned on page 58 of my "Mathematical Astronomy Morsels" (Willmann-Bell, 1997). -- By the way, a second "Morsels" book should be published soon! Jean Meeus

From Michael Gill

Since all non-central TSEs have a value of gamma close to 1.0 or -1.0 they will only ever be visible from high latitudes and have inaccessible eclipse tracks.

Presumably, this is the reason for the scarcity of observations at these events.

Do accounts exist of observations made during the total phase of *any* non-central TSE? Does anyone on the list know of any references?

If not, we'll have to wait until 2043 to get a chance (the first?) of observing totality at a non-central TSE. If that event is clouded out, the next opportunity will be 2459! Michael Gill.

From Peter Tiedt

And, the chances of clear skies at those latitudes are almost zilch! So expensive trip to get there fur lined boots etcetera needed special films / camera for the extreme conditions sun right on the horizon very short duration any takers for 2043? I'll stay at home. Peter

From Jen Winter

Perhaps by 2043, we'll have developed a "cloud filter". Clear Skies! jen

From Jim Huddle

Dear Shadow-heads, I realise the question was about TOTAL solar and TOTAL lunar eclipses occurring during the same eclipse season, but as an added curiosity, please let me point out that on 16 May 2003, there will be a total lunar eclipse, followed by an annular solar eclipse on 31 May 2003.

Is this solar eclipse non-central? As Philip S. Harrington points out in his book, "ECLIPSE!" this eclipse has an unusual geometry in that the umbral cone passes over the north pole before it touches the Earth. Or must the axis miss the Earth completely before the eclipse is called non-central?

(Continued on page 34)

GENERAL TOPICS

In any case, this lunar eclipse will be observable in its entirety from all of Central and South America, the eastern half of North America, and the westernmost tip of Africa as well as the Atlantic Islands. The solar eclipse will be visible from Iceland, Northern Scotland, and much of Greenland. Jim Huddle

From Tony Crocker

I suspect Peter's analysis is applicable to 2003. For the diehards, chances of success are surely going to greater in an airplane than on a \$15,000 cruise with such a low sun angle (max 12 degrees per Emapwin). I'd like to go to Antarctica sometime, but there are several trips from South America in the \$5,000 - \$7,000 range, some of which also go to the Falklands and South Georgia. IMHO trying to see 2003TSE from a ship is an expensive trap with low odds of success. Perhaps Fred Espenak or Jay Anderson can correct me if I am wrong in this analysis.

From Glenn Schneider

Now, Peter, I met with exactly the same kind of comments regarding the October, 1986 eclipse - but to this day - after having seen it - it is probably still my "personal best". Worth every penny of the few seconds of it.

chances of clear skies... That's what airplanes are for.

expensive trip... well in 2043 if I start saving about 10 cents a day I can do it. Oh! I forgot about 42 years of compound interest! (maybe a nickel a day)?

special films/camera... nah! Keep keep a self-heating gel pack on the back and a "regular" camera and film will work fine. I did this all the time in the Antarctic when I worked there - no problem,

http://nicmosis.as.arizona.edu:8000/SPOLE1_SM.jpg and in Siberia in 1997.

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/ECLIPSE_97/ECLIPSE_1997.html

sun right on horizon... makes for a VERY interesting eclipse

http://nicmosis.as.arizona.edu:8000/ECLIPSE_WEB/PARTIAL_76/PARTIAL_1976.html (well, OK, that wasn't total... but an on-horizon TOTAL would be spectacular (if clear))

short duration... its quality, not quantity

Any takers? If I am still breathing in 2043, I'll be there. Glenn Schneider

From Joel Moskowitz

I'll be 96 in 2043. I hope I don't HAVE to stay at home. Joel M. Moskowitz, M.D.

From Jean Meeus

In a previous message, I said that during the period 1951-2050 there are eleven cases when a total solar eclipse and a total lunar eclipse occur during the same eclipse season. Here, "total" solar eclipses include annular-total eclipses, and total eclipses that are not central.

Now, I did a similar search for the somewhat longer period from 1650 to 1800, and found only SEVEN cases. Here are these cases, for which I mention only the year and the month(s), and the type of the solar eclipse :

1656 July non-central total
 1674 July-Aug total
 1768 June-July annular-total
 1769 June total
 1786 July total
 1787 June total
 1797 June total



Not only is there a smaller number of cases during 1650-1800 than during 1951-2050, but look at the large gap of nearly 100 years between 1674 and 1768 !

Perhaps the famous period of 586 years plays a role here, too. I didn't investigate the subject further, however. As Tony Crocker wrote, "true frequencies need a data set of at least 600 years to be reliable." Jean Meeus

(Continued on page 35)

GENERAL TOPICS

From Jean Meeus

Jim Huddle asks whether the annular solar eclipse of 2003 May 31 is non-central.

No, it is a CENTRAL annular eclipse, because the axis of the lunar shadow passes over the Earth, and hence there is a "central" line.

However, that eclipse is indeed unusual, because only a part (but more than 50%) of the (extension of the) lunar shadow passes over the Earth. For this reason, the path of annular eclipse degenerates into a semi-circular region. It has a southern limit, but no northern one in the usual meaning, the northern limit of the path of annular phase being replaced by the curve "Sun on the horizon at maximum eclipse".

In fact, all this is rather "old stuff". The semi-circular region of annular phase of that eclipse can be seen, for instance, in the map for that eclipse as given by Fred Espenak in his "Fifty-Year Canon of Solar Eclipses, 1986-2035" (NASA Publication).
Jean Meeus

From Fred Espenak

Olivier has presented a very nice summary above. I would just like to comment on a fine point. Although the two LUNAR eclipses of 2003 are both total eclipses, NEITHER one is a central eclipse.

A central eclipse is one in which the the shadow axis intersects either the Earth (for a solar eclipse) or the Moon (for a lunar eclipse).

Take a look at the diagrams the two total lunar eclipses of 2003:

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

and

<http://sunearth.gsfc.nasa.gov/eclipse/LEplot/LEplot2001/LE2003Nov09T.gif>

You will notice that the Moon misses the central axis of the umbral shadow in both of these events.

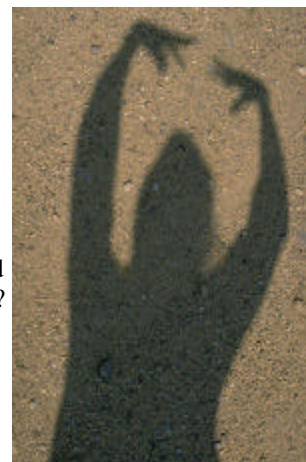
I do not believe that it is possible to have two central eclipses (in any combination of solar and lunar) during an eclipse season. Can anyone find an exception in my 5,000 year eclipse catalogs?

Solar Eclipses: <http://sunearth.gsfc.nasa.gov/eclipse/SEcat/SEcatalog.html>

Lunar Eclipses: <http://sunearth.gsfc.nasa.gov/eclipse/LEcat/LEcatalog.html> - Fred Espenak

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

Glenn, I remember from a newspaper that the Russian scientific base on Antarctica during the International Geophysical Year would observe the noncentral TSE of 23 October 1957. On that epoch my age was 15 years and I was already two years an amateur astronomer. I do not remember about references to scientific journals. In my hometown of that time (Amsterdam) was a communist editor 'Pegasus', that published not only propaganda rubbish, but also popular scientific booklets about Russian geophysics and space research. There I found good publications of prof. A. Sternfeld about Homann orbits to the nearest planets. He was an active Russian scientist in those days who published popular booklets about the Sputnik and space research during the International Geophysical Year. May be (small chance) this gives you a link in old literature of 1957. Wil Carton



GENERAL TOPICS

From Fred Espenak TO SENL Date 26.09.01 RE SENL July Special, August and September on line

Joanne Edmonds has been a very busy lady! She has prepared a host of great issues of the SENL (Solar Eclipse Newsletter) for the months of July, August and September. Note that besides the normal July issue, that month also features a 3-part special issue covering the June 2001 eclipse.

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

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

Other recent issues currently linked from the above page include:

SENL - August 2000 (Old Format, 65 Kb pdf file*)
 SENL - September 2000 (Old Format, 93 Kb pdf file*)
 SENL - October 2000 (Old Format, 62 Kb pdf file*)

SENL - November 2000 (1.4 Mb pdf file*)
 SENL - December 2000 (995 Kb pdf file*)
 SENL - January 2001 Special A (1.2 Mb pdf file*)
 SENL - January 2001 Special B (0.9 Mb pdf file*)
 SENL - January 2001 Special C (1.1 Mb pdf file*)
 SENL - February 2001 Part A (1.0 Mb pdf file*)
 SENL - February 2001 Part B (1.1 Mb pdf file*)
 SENL - March 2001 (1.1 Mb pdf file*)
 SENL - April 2001 Part A (1.3 Mb pdf file*)
 SENL - April 2001 Part B (0.9 Mb pdf file*)
 SENL - May 2001 Part A (1.0 Mb pdf file*)
 SENL - May 2001 Part B (1.3 Mb pdf file*)
 SENL - June 2001 Part A (0.7 Mb pdf file*)
 SENL - June 2001 Part B (1.0 Mb pdf file*)

NEW:

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



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

The old format issues have no color, no figures or photos while the newer issues contain graphics, photos and illustrations.

Thanks for the hard work Joanne! - Fred Espenak

From PP

As I did in the past, for each SENL I will distribute an index. See below the year, month of the issue, the title of the item and behind the page of the newsletter. Back up issues of the SENL are nearly finished in the pdf format and will be soon on Fred's pages. A full index will be soon available as well. I hope you enjoy. And ... keep those solar eclipse related messages coming ...

Year Mth Item and page

GENERAL TOPICS

From : "Barrie W. Jones" <b.w.jones@open.ac.uk> To : SOLARECLIPSES <SOLARECLIPSES@AULA.COM> Subject : RE: [SE]

shadow bands Date : Sat, 15 Sep 2001 16:27:42 +0100

The atmospheric turbulence that causes the bands is in the lower km or so of the troposphere. This turbulence is driven by the winds, and so the bands should move in the direction of the component of the wind that is perpendicular to the bands. If the direction of the winds changes a lot with altitude in the lower troposphere the band direction will depend on the winds at the level in the troposphere that dominates the bands. If there is a band pattern on the ground the motion can thus be either to the left or the right, depending on the wind direction.

NB The wind at ground level might differ from that a few hundred metres up, yet it is this higher altitude wind that will determine the direction. Barrie W Jones

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

Barrie: Then in the event of a moment of absolutely perfect seeing, then I guess that there would be no shadow bands. Is that correct? Are there reports on seeing quality during the eclipse? Robert B Slobins

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

Barrie, How high is the troposphere? Where does it begin and end? And while you're at it, would you please tell us where the other parts of the atmosphere begin and end, so that we have a basis for comparison? Thanx, Jim Huddle

From : "Madden.G" <iluvex@netacc.net>

Jim, The TROPOSPHERE begins at ground level and extends upwards to approximately 14 km.

The TROPOPAUSE begins at about 18 km.

The STRATOSPHERE terminates at about 50 km above GL (the Ozone Layer is in here near the upper limit of the stratosphere).

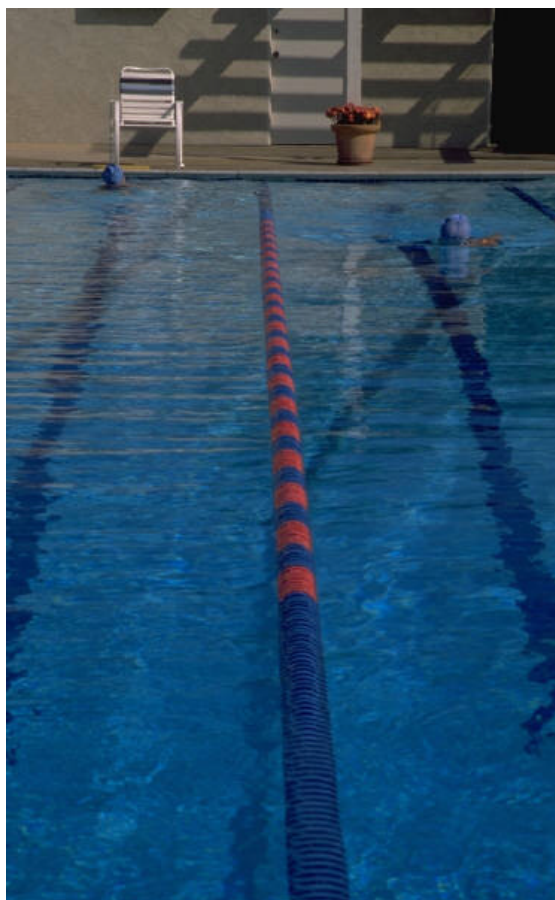
The MESOSPHERE terminates at about 90 km above GL.

And the IONOSPHERE terminates at about 350 km above GL. gjm

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

Dear Jim, The troposphere is the lowest layer of the atmosphere, extending to roughly 12 km above sea level. It is where most of the weather and the familiar clouds lie, and it accounts for nearly all the mass of the atmosphere. It is overlain by the stratosphere, then the mesosphere, and then the thermosphere. The atmosphere gradually tails off with altitude, right from sea level, so the thermosphere, which extends from about 80 km upwards, is extremely tenuous.

If ground level is at high altitude (as it was at my eclipse site in 1994) then the troposphere still extends to about the same altitude above sea level, and so there is less of it above the ground at high altitudes.
Barrie W Jones



GENERAL TOPICS

From : Michael Gill <eclipsechaser@yahoo.com> To : "SOLARECLIPSES@AULA.COM" <SOLARECLIPSES@AULA.COM> Subject : [SE]

'The Observer' - 16th September 2001 Date : Mon, 17 Sep 2001 11:02:06 -0700 (PDT)

The travel section of 'The Observer' newspaper (UK) had a query about travelling to the November 23rd 2003 total solar eclipse in Antarctica.

Both the query and the response can be read online at: <http://www.observer.co.uk/travel/story/0,6903,552504,00.html> Michael Gill.

From : "Vic & Jen Winter, ICSTARS Inc." <webmaster@icstars.com>

Hello all, I checked the page and found most of the information accurate except a few notes:

>>but their itineraries and costing plans have yet to be finalized

This isn't true. We are already under contract for our cabins with final cost, itinerary and terms, and have been for over a week.

>>if there is sufficient demand.<<

I would have to say the demand is already there. I learned yesterday that Quark (Sailing with the Khlebnikov) has all of its cabins allocated already to agencies, such that they will not be making any offerings to the public themselves.

Retail sales have begun. Clear Skies, jen

From : KCStarguy@aol.com To : SOLARECLIPSES@aula.com Subject : [SE]

what I will do on my next eclipse Date : Wed, 5 Sep 2001 07:16:29 EDT

Each eclipse is an experience in itself. Even after 7 totals, I will do the following regarding the next eclipse, whether it be 2002 or ?, to counter some eclipse trip bloopers. My list is below. Others may add and send theirs to the listserve. Maybe we will all learn another trick or two. Dr. Eric Flescher (KCStarguy@aol.com)

My listing for the next eclipse

(1) Make sure I check my videocamera before each sightseeing trip and wipe it with a lens cloth to get rid of any annoying water drops that may be on it (so I don't have a blob in some of my video shots)

(2) Make sure that my batteries for my camcorder work right and don't blitz out on me.

(3) Have a taperecorded countdown towards second contact to time and record the events but also remind me to do certain things procedures (lists don't always work - you have to look at them).

From : "Richard MONK" <richard.i.monk@ntlworld.com>

Yes!! And don't forget to check the focussing of your manual lenses during totality. What you think is infinity on 500mm mirror lenses may not be after the temperature has dropped. You'd think I would have got it right after 8 TSEs! Richard

From : Anne Marigold <Anne.Marigold@sis.securicor.co.uk>

(Continued on page 39)

GENERAL TOPICS

I'm going to make sure, in advance, that I have some idea where to look when someone shouts "Shadow Bands"! Having enjoyed the brilliant experience of totality with a clear blue sky in Zimbabwe I now appreciate the cloudy French one which was more 'spooky' and with a super 'ring of fire' and the bizarre site of 2 CVs parked along the field margins all over the plain! I'm planning on the Orkneys for the Annular in 2003 but not with any great hopes of a clear sky! Cheers, Anne

From : Peter Tiedt <Peter.Tiedt@npc-eagle.co.za>

Eric (et al)

>(3) Have a taperecorded countdown towards second contact to time and record the events but also remind me to do certain things procedures (lists don't always work- you have to look at them.

I did this for 2001 in Zambia. Basically I followed Glenn Schneider's recipe - don't quite know the URL, but it is about somewhere.

In addition I "gonged" each minute, starting from 10 min to 2nd contact. I "reminded" myself of shutter speeds/f-stops, all phenomena (baily's beads diamond ring, chromosphere, horizon appearance, fauna etc etc, how many seconds of totality left and anything else I could think of.

It worked a beaut, and I also received many favourable comments from those in the tour group who were close to me - they also found it very useful. I stopped at 3rd contact + 2min as I only had a 15 minute tape in the dictaphone.

AAMO I had two dictaphones going - the one above on playback and another on record. It was very interesting to hear the playback machine output being recorded together with oohs and aaahs and the shouts of the phenomena.

If you are not sure of exact totality durations where you are headed, prepare several tapes with various durations of totality - say 5 sec difference on each tape - then pick the most appropriate one on e-day. Highly recommended. Peter

From : KCStarguy@aol.com

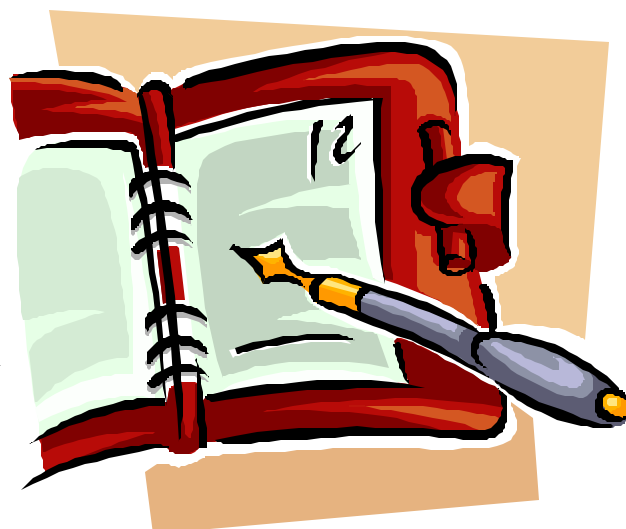
Hmmm I would never have thought the temperature would affect it that much. wow. thanks for sending.

From : "Richard MONK" <richard.i.monk@ntlworld.com>

It's a real puzzle then. Last June I used two 500mm mirror lenses, each with their own 1000 Oaks filter for partial phases. Lovely sharp images of sunspots during partial - then you get the no-go time between removal of filters and totality when you daren't look through the viewfinders. Slight barrel movement then perhaps?

At the recent Totality day in Milton Keynes I had the opportunity to compare my efforts with eclipse photos of others using the same types of lenses - and those others were far sharper. Subsequent tests have shown my Tamron to be fine but my Vivitar (taken as a reserve) to be wanting. I a super 95mm APO like yours would be a nice replacement for the latter or more likely the TeleVue 85!

Incidentally, I have had a phenomenal number of hits on my website for those eclipse track pushpins. I hope people found them useful. Keep hitting me on /homepage.ntlworld.com/rimonk/index.htm
Cheers, Richard



GENERAL TOPICS

From : Ron Baalke <baalke@ZAGAMI.JPL.NASA.GOV> To : HASTRO-L@WVNVN.WVNET.EDU Subject : Yohkoh Mission Celebrates A Decade of Solar Discovery Date : Fri, 14 Sep 2001 08:11:52 -0700

William Steigerwald, Goddard Space Flight Center, Greenbelt, Md. September 10, 2001 William.A.Steigerwald.1@gsfc.nasa.gov (Phone: 301/286-5017)

RELEASE NO: 01-87 Yohkoh Mission Celebrates A Decade of Solar Discovery

The intrepid Yohkoh spacecraft has been taking X-ray pictures of the Sun for more than 10 years, and is still going strong. More than six million Yohkoh "X-rays" of the Sun are helping astronomers better understand the nearest star.

The Japanese-led international mission was launched August 30, 1991 from Kagoshima Space Center, Japan. Astronomers are celebrating Yohkoh's 10th anniversary with a scientific conference September 17 - 20 in Kona, Hawaii to discuss its latest discoveries.

"Yohkoh was designed and flown to address the how, the why, and the where of high energy processes on the Sun," said Dr. Loren W. Acton of Montana State University-Bozeman, the US Principal Investigator for the Yohkoh Soft X-ray Telescope (SXT) instrument. "It has succeeded beyond our original hopes and dreams in all of these areas. The quality, coverage, and duration of Yohkoh data are unprecedented in a solar space mission."

Among the many results from Yohkoh are discoveries about:

* The Sun's corona, including information about how and where this multi-million degree outer layer of the Sun's atmosphere is heated to temperatures up to hundreds of times greater than the solar surface. Yohkoh also tracked the dramatic year-to-year evolution of the corona.

* The physics of solar flares, titanic explosions in the atmosphere of the Sun caused by the violent release of magnetic energy. A typical solar flare can release in less than one hour as much as 10,000 times the annual energy consumption of the US. Yohkoh observations have helped astronomers understand better than ever before how the Sun's magnetic fields are deformed and twisted, broken and reconnected during flares; and how the electrified gas (plasma) of the Sun's corona is heated to millions of degrees during flares.

* The structures that produce ejections of material from the Sun, helping astronomers to understand and begin to predict "space weather." Although the prediction tools are still rudimentary, two items of note along this line are the discoveries that certain structures on the Sun, namely sigmoids and trans-equatorial interconnecting loops (TILs), are more likely to be the sites of solar eruptions. The sigmoids -- S-shaped regions seen in coronal imagery -- have been found to be more likely to erupt than non-S-shaped regions. The TILs have recently received attention as another possible source of mass ejections.

Yohkoh is the first spacecraft to continuously observe the Sun in X-rays over an entire sunspot cycle, the roughly 11-year cycle in which the Sun goes from a period of numerous intense storms and sunspots to a period of relative calm and then back again. "The value of the Yohkoh observations increases as the mission continues because they better reveal the many faces of our variable Sun," said Acton. Additionally, the Yohkoh SXT carries the longest-operating Charge Coupled Device (CCD) camera in space. After 10 years, the CCD camera -- similar in operation to digital cameras now popular worldwide -- is still taking beautiful X-ray pictures after collecting more than 6 million images.

Yohkoh is a mission of Japan's Institute of Space and Astronautical Sciences with the cooperation of the United States and the United Kingdom. The US part is funded by NASA; it comprises the building of the SXT by Lockheed-Martin Solar & Astrophysics Laboratory (LMSAL), under the leadership of Dr. Acton. A consortium of organizations is responsible for the science operations of SXT and the Yohkoh data analysis, including LMSAL, Montana State University, Stanford University, and the University of Hawaii.

The collaboration has been extremely fruitful, with more than 900 peer-reviewed publications and 100 master's and doctoral theses to date. Yohkoh data are freely available on-line for interested scientists worldwide, and are being analyzed in many

(Continued on page 41)

GENERAL TOPICS

countries, including China, Saudi Arabia, India, Argentina, Brazil, Russia, Australia, most European countries, and Canada.

According to the latest projections, Yohkoh will stay in orbit until the next solar maximum, around 2010. In the coming years, Yohkoh will closely collaborate with the High Energy Solar Spectroscopic Imager (HESSI), an upcoming NASA mission, providing crucial calibration data for its high-resolution hard X-ray images. Solar-B is the Japanese follow-up mission, again with involvement from the US and the UK. It will look at the Sun in soft X-rays, as Yohkoh before, but it will also make very high resolution images in visible light.

For more information, movies, and images, refer to: <http://www.gsfc.nasa.gov/topstory/20010917yohkoh.html>

From PP TO SEML Date 26 September 2001 RE Solar Eclipse activity

Dear All, A while ago Chris O'Byrne suggested to compare the amount of solar eclipse messages with the period before, or after solar eclipses. The Solar Eclipse Newsletter exists since November 1996 and the Solar Eclipse Mailing List since 10 December 1997. So it was a little bit digging in the archives and plot the number of pages of the newsletter and the number of solar eclipse messages on the chart.

The Solar Eclipse Newsletter contains solar eclipse related messages from as well the SEML as the Canadian eclipse mailing list (started July 1998) as the HASTRO mailing list. Both media gave the kind permission to publish their messages in the SENL.

The graph of the number of messages and the number of pages will be published in the October 2001 issue of the SENL. In the latest issue you could find the plot of the number of subscribers on the SEML, still around 300 and out of 40 different countries.

The peaks in number of messages are quite logical: February 1998, August 1999 and June 2001. But also January 2000 with its lunar eclipse.

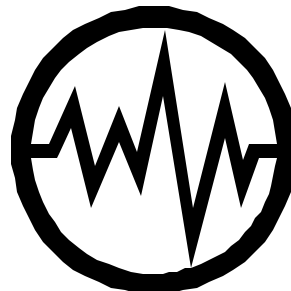
Those who thought that it was busy on the SEML for the June 2001 eclipse, were maybe not aware of what happened around August 1999. June 2001 had an average of 16 messages a day, while around August 1999 we had about 33 messages a day. August 1999 had 1024 messages while June 2001 "only" 485 messages. February 1998, when the SEML was pretty young (2 months old), we had only 152 messages and an average of 5 messages a day.

Thank you very much indeed for all the valuable information and data you supplied to the SEML and the SENL. Without you all it was not possible to give all eclipse enthusiasts that interesting solar eclipse related item they missed or needed. Thank you for being patient when I act as a shepherd, keeping the flock of sheep together, and on the solar eclipse related track.

and ... keep those solar eclipse related messages coming... Best regards, Patrick

From George Madden

But . . . how did he know? madden/rochester

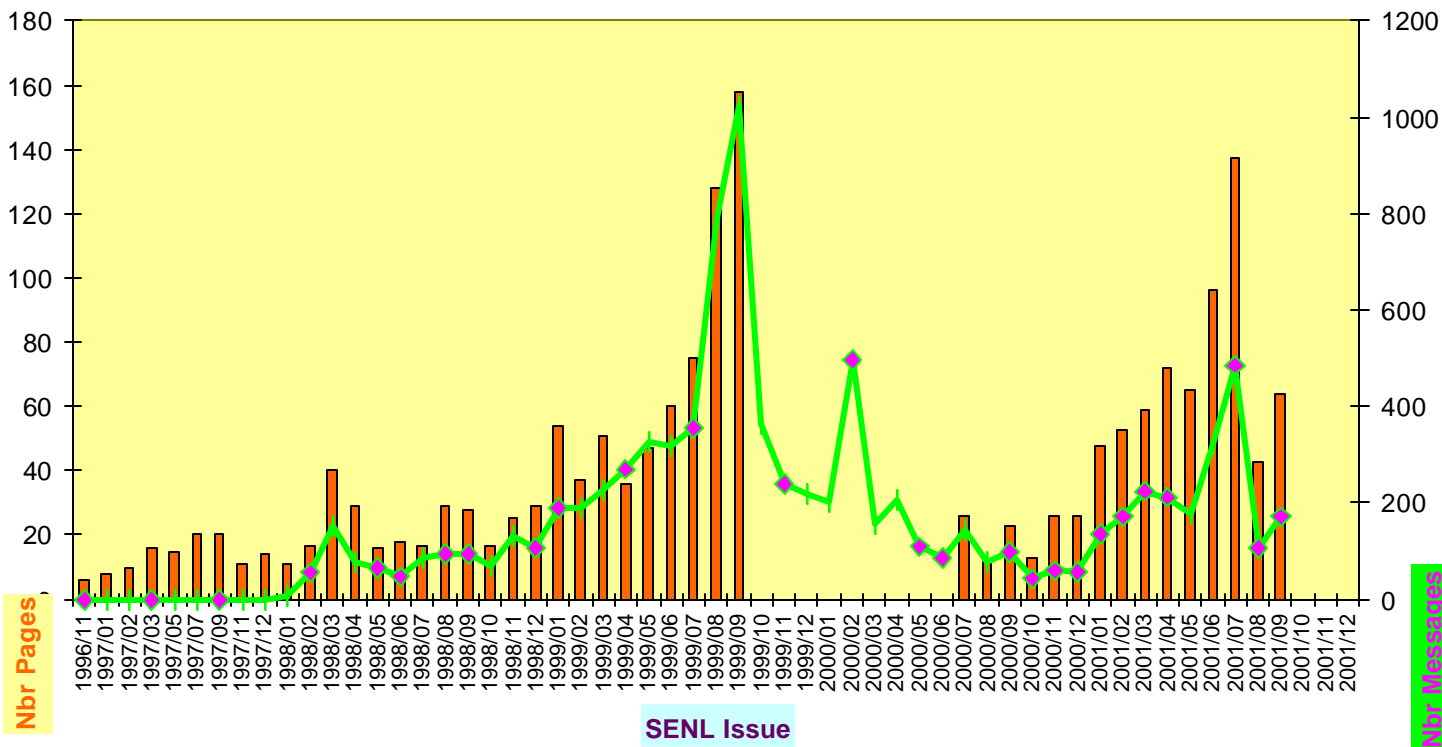


General Topics

UPDATE ON THE MAILING LIST ACTIVITY

Solar Eclipse Newsletter

Nbr Pages Nbr Messages



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From : Yannick Blin
<tituspro@yahoo.com> Solar eclipse
mailing list SEML
<solareclipses@aula.com> Subject :
[SE]

Contact & 2001 solar eclipse

Date : Fri, 28 Sep 2001 09:55:56 -
0700 (PDT)

Dear SEML members, I'm Yannick
Blin. I live in France (Orleans, near
Paris).

First, sorry for my very bad english.

I'm a "newbie" in total solar eclipses
observation. I discovered this phe-
nomenon during the 1999-08-11 total
solar eclipse (in France). We (my
friends and me) were very lucky and
saw it through the clouds during about
1 minute and a half.

But it was not enough. So, we were in
Zambia (Chisamba) for the 2001-06-
21 total solar eclipse.

I hope to go to South Africa (?) in de-
cember 2002.

I like astronomy and photography.
With 2 friends we created a website :

<http://www.poisaya.com/> where you
can find our first eclipses photographs. We
have to learn a lot and I think your mailing-list
is a nice place for this.

For the last total solar eclipse (2001-06-21) we
went to Zambia.

Our photographs are now on line in our web-
site.

The eclipse : [http://www.astrosurf.com/
poisaya/astro/eclipse/2001/](http://www.astrosurf.com/poisaya/astro/eclipse/2001/)

And some photographs of Zambia and espe-
cially of the Victoria Falls : [http://www.
astrosurf.com/poisaya/photo/zambie/](http://www.astrosurf.com/poisaya/photo/zambie/)

Enjoy ! Astro & photographically yours, Ya-
nick Blin, Pierre-Olivier Gallut, Isabelle Rapin,
Poisaya ... astro & photo, [http://www.poisaya.
com/](http://www.poisaya.com/)

From : Michael Gill <eclipsechaser@yahoo.com>

Hi Peter, Will you be including any maps/plans about the **annular
eclipse in October 2005?**

Cheers, Mike (still ploughing through my e-mail backlog)

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

Hi Michael, If you ask nicely ;-) Busy with 2030 at the mo-
ment, and will also do 2013. 2005 is low on the list but will also do.
Peter Tiedt

From : Evan Zucker <ez@AbacusTotality.com>

Boy, you sure plan ahead, don't you <g>? -- EVAN

From : Stig Linander <linander@worldonline.dk> To : Solar Eclipses
<solareclipses@aula.com> Subject : [SE]

**New photos from Madagascar and two questions about the di-
amond ring Date : Wed, 5 Sep 2001 23:31:44 +0200 (CEST)**

Hi, Two photos taken by Leif Schack-Nielsen have been added to
http://www.linander.dk/stig/se2001_e.htm

One showing the inner corona and prominences, the other showing the
diamond ring at third contact.

Question 1: The diamond ring at second contact marks the end of the
partial phase and the beginning of totality. But does the diamond ring
itself belong to the partial phase or to totality?

In Hungary 1999 darkness came suddenly (I assume that was second
contact) and I saw the diamond ring after that. From that experience I
was convinced that the diamond ring was part of totality.

I've been analyzing a video clip my wife took in Madagascar 2001. We
saw the eclipse about 23 km north-east of Ranohira. In Ranohira the du-
ration of totality was 2 minutes and 30 seconds - according to Espenak.
The diamonds lasted 5-10 seconds each. On the video, both the light
from the Sun during the partial phase and the bright diamonds cause the
camera chip to bloom. On the video it takes 2 minutes and 28 seconds
from blooming ends (the first diamond disappearing) till blooming
starts again (the second diamond appearing). From that it seems that the
diamond ring was part of the partial phase.

Question 2: You need to protect your eyes during the partial phase but
not during totality. What about the diamond ring? Is it safe to view the
diamonds without protection?

I saw the diamonds without protection. They were _so_ beautiful I
couldn't do anything but looking. But they were _so_ bright that I won-
der if that was the right thing to do. Best regards, Stig.

(Continued on page 44)

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From : Evan Zucker <ez@AbacusTotality.com>

>The diamond ring at second contact marks the end of the partial phase and the beginning of totality. But does the diamond ring itself belong to the partial phase or to totality?

I think it's a matter of semantics and personal opinion (and also of no real significance). But, in my opinion, the diamond ring is part of the partial phase, which I would define as any time in which any portion of the photosphere is visible (which is why an annular eclipse is a special case of partial eclipse).

>In Hungary 1999 darkness came suddenly (I assume that was second contact) and I saw the diamond ring after that. From that experience I was convinced that the diamond ring was part of totality.

But it's darker after the second contact diamond ring than before or during.

>You need to protect your eyes during the partial phase but not during totality. What about the diamond ring? Is it safe to view the diamonds without protection?

Technically not, but practically yes, at least with the naked eye. I wouldn't recommend viewing the diamond ring through binoculars or a telescope. Since, by my definition, the diamond ring is part of the partial phase, and since it's never safe to view the partial phase without an appropriate filter, ipso facto it's not safe to view the diamond ring without a filter. But since the diamond ring lasts such a brief period of time, I've never heard of that causing any problems. Be especially careful with the third contact diamond ring because that turns into full-blown partiality, and so the danger increases the longer you watch. I stand ready to be refuted! Evan H. Zucker

From : tig Linander <linander@worldonline.dk>

If the diamond ring disappeared after just 1-2 seconds, yes, it's of no real significance. But in 2001 they lasted 5-10 seconds, and I think it's of some significance whether totality lasts 2 minutes 30 seconds or 2 minutes 45 seconds.

Thank you for your reply. Your opinion on eye safety and diamond rings is very interesting. Best regards, Stig.

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

By definition, totality begins at 2nd contact (last bead of photosphere vanishes), and in ends at 3rd contact (first appearance of a bead of photospheric light).

It's not quite so simple to determine when the 2nd contact diamond ring begins or when the 3rd contact diamond ring ends because it depends to a large extent on the local atmospheric conditions and your observing instrument (naked eye? binoculars? telescope? camcorder?)

As previous discussions have already covered, the corona can actually be seen outside of totality for up to several minutes if one blocks or somehow occults the bright partial crescent and looks at the opposite limb of the Sun.

Of course, this is a much compromised view of the corona compared to totality, but it is indeed possible. - Fred Espenak

From : "Vic & Jen Winter, ICSTARS Inc." <webmaster@icstars.com>

I suspect this is, as Fred suggests, related to the observation method of the observer. We all know how less sensitive film is to the subtleties of the human eye (thus difficulty matching the visual image to the print)... This must play a factor in the way we perceive the last glimpse of the photospheric crescent fading away.... and how our eye subsequently adjusts to be able to see the corona.

For example, a first time observer with binoculars may watch the last glitter of the diamond ring slipping away and a number of seconds could pass before mentally adjusting to the appearance of the corona. On the other hand, if an observer is specifically waiting for corona, and trying to see it, ignoring the ring and beads, will he perceive it first? I would believe so. But that's only a purely perceptual difference based on individuals and their viewing methods.

(Continued on page 45)

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(Continued from page 44)

>>By definition, totality begins at 2nd contact (last bead of photosphere vanishes).....It's not quite so simple to determine when the 2nd contact diamond ring begins or when the 3rd contact diamond ring ends

I agree this is a very subtle moment and even at a very high magnification, and 'clicking quickly' we have many variations of our last, Baily's Beads shots . Where exactly does totality begin?

Is this the last of the photospheric crescent? <http://www.icstars.com/Mad/Slit/FullSlit.jpg> Or is this ? <http://www.icstars.com/Mad/MadPhaseII/pages/Prominence1.htm>

>>the corona can actually be seen outside of totality for up to several minutes if one blocks....

I was pleasantly surprised to see how much inner corona appeared on some late diamond ring shots. I suppose if I had bracketed, I could have captured even more outer-corona. <http://www.icstars.com/Mad/MadPhaseII/pages/DRLateTITE.htm> Clear skies, jen

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Joanne & Patrick

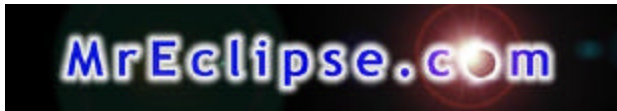
Solar Eclipse Mailing List



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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.

LAST WORDS:

From : Kidinvs@aol.com To : SOLARECLIPSES@aula.com Subject : [SE]

Zimbabwe economics.... Date : Wed, 5 Sep 2001 17:41:19 EDT

All though the 2002 eclipse is still many months away, I just got an email from some friends I made in Zimbabwe... Basically, the country is still safe for tourists, even though the locals are struggling for lack of Forex. The official rate for the Zim \$ is still 58 Zim\$/ 1 US\$ The street rate now is just over \$Z 300 !!!!! It was Z\$ 130 in June.... very sad. Eric Brown Zimbabwe 2002 www.eclipsesafaris.com

