

# SOLAR ECLIPSE NEWSLETTER

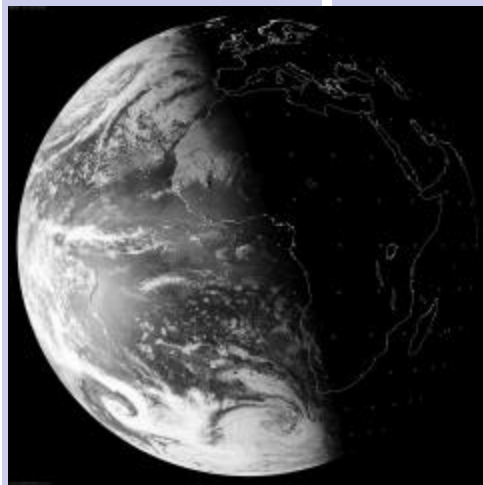
## Solar Eclipse Mailing List

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Dear Eclipse Chasers  
Another month on the mailing list has passed and Africa comes ever closer. We ourselves are already checking equipment and trying to



practice filming the sun, when it decides to make an appearance. The messages over the month were interesting and varied. Ranging from how to film the eclipse, UFO's & the latest reports and information on Africa.

There was a great idea of a reunion in Lusaka for anyone in the vicinity, the hunt

is on for a location that can accommodate everyone, as it is expected that lots of people will be in the area, no surprises there!

There are some stunning photos in this months edition, please check out the picture by Juan Carlos of the elusive green flash, and a picture we received from Gernot and Pascale who are on their expedition to the eclipse overland from Germany, be sure to look them up on the web site.

Best regards  
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 e-mail messages that other subscribers send to the listserver. Only subscribers can send messages.

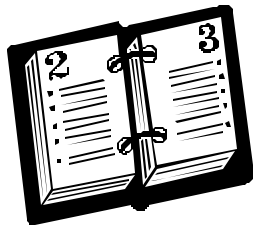
## SUBSCRIBING TO THE SOLAR ECLIPSE MAILING LIST

**THE SOLAR ECLIPSE MAILING LIST IS MAINTAINED BY THE LIST OWNER PATRICK POITEVIN AND WITH THE SUPPORT OF JAN VAN GESTEL**

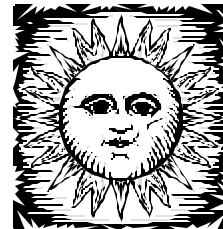
### HOW TO SUBSCRIBE:

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

## ECLIPSE CALENDAR



### MARCH



Please find herewith March's solar eclipse calendar. If you have remarks or additional items, please send me a message. If you are interested in the source, please let me know and I send you the list of the abbreviations.

**March 02, 1904** There are 3 eclipses in March 1904: 1904 Mar 02 Penumbral Lunar Eclipse, 1904 Mar 17 Annular Solar Eclipse and 1904 Mar 31 Penumbral Lunar Eclipse. The next March with 3 eclipses is 2295: 2295 Mar 02 Penumbral Lunar Eclipse, 2295 Mar 16 Annular Solar Eclipse and 2295 Mar 31 Penumbral Lunar Eclipse. Ref. FE 6/00

**March 02, 2910** Not before 2910 March 2 will the island of Tahiti see its first total solar eclipse since that of 1698 April 10. Ref. JM 06/1999.

**March 03, 1337** Johannes de Muris remarked that the eclipse occurred about 16 minutes earlier than expected from the Alfonsine tables (ref. PG 3/99).

**March 03, 1956** Death of Willem H. Keesom, Dutch physician. Researched on lower temperature whereas he brought helium in solid condition (1926). He discovered the two kind of helium (Helium I and II). In 1942 he wrote the book Helium. Born in 1876. Ref DD 3/99

**March 03, 1959** Launch of Pioneer 4 (US). Passed Moon at 60.000km, first satellite in orbit around the Sun. Ref. DD 03/99.

**March 03, 1985** Death of Iosif S. Shklovskii, Russian astronomer. He studied the corona and proved a temperature of millions degrees. Born in 1916. Ref. DD 03/99.

**March 03, 1987** Pioneer 9 (US) stops, was a solar satellite. Ref. DD 3/99.

**March 03, 1990** Death of Charlotte E. M. Sitterly, American astronomer. End 20s, she worked together with Charles E. St. John and Harold Babcock at Mount Wilson Observatory on the study of the solar spectrum. She analyzed the lines in the spectrum of sunspots. Published books about solar spectra till she was 90 years old. Born in 1898. Ref. DD 3/99

**March 04, -0180** (181 BC) The Empress Dowager died on 18 August 180BC. The eclipse and the Empress' reaction are described in detail in the of Shih-chi, a work composed some 150 years before Han-shu. This is clearly based on an eyewitness report (ref. PG 3/99).

**March 04, 1866** Sir Norman Lockyer started his spectroscopic observations of the Sun. He proved quite quick that sunspots were colder places. Ref. DD 3/99

**March 04, 1923** Birth of Patrick Alfred Caldwell Moore. Parents Gertrude and Charles Caldwell Moore. Author or co-author of almost 200 books, compose 2 operas and host one of the longest running shows on television The Sky at Night (launch 26 April 1957) without a break. His first book was in 1952. He joined the BAA when he was 11 years old and the RAS in 1946. He observed many solar eclipses. (ref. A-S 03/98)

(Continued on page 3)

## ECLIPSE CALENDAR

**March 04, 1968** Launch of OGO 5, American geophysics satellite. Studied Solarwind and magnetosphere.

**March 05, -1222** (1223 BC) In references the oldest record of a verifiable solar eclipse, on a clay tablet found in the ruins of Ugarit ( Syria). This was a total solar eclipse in North Africa and the Middle East. Totality at maximum was 3m55s. Other references say "the sun went down" which also has the expression for "to set".

**March 05, 1973 2001** Einstein 1973 EB. Minor Planet discovered and later named in honor of Albert Einstein (1879-1955), American theoretical physicist, mainly known for his relativity. (Ref. Rc 1999)

**March 06, 1915** Death of James Francis Tennant (1829-1915). During an eclipse seen from the Red Sea through India to Malaysia and New Guinea, prominences are first studied with spectroscopes and shown to be composed primarily of hydrogen by James Francis Tennant (1829-1915), UK, John Herschel (UK - son of John F.W. Herschel, grandson of William), Pierre Jules Cesar Janssen (1824-1907, France), George Rayet (France), and Norman Pogson (UK/India). (Ref. Rc 1999)

**March 06, 1975** Death of Roderick Oliver Redman. On August 31, 1932 G.G. Cillie (UK) and Donald H. Menzel (US) uses eclipse spectra to show that the Sun's corona has a higher temperature (faster atomic motion) than the photosphere. Confirmed, with much higher temperature, by Roderick Oliver Redman (1905-1975) during an eclipse in South Africa on October 1, 1940. (ref Rc 1999)

**March 07, 1951** Annular eclipse which was seen from New York as a small partial eclipse. Buffalo Bob Smith, died in 1998 at the age of 80 years in North Carolina, broadcasted this eclipse on NBC in 1951 with a camera on top of the RCA building. He had the famous childrens TV show Howdy Doody. (ref. ENB 9/98)

**March 07, 1962** Launch of OSO 1, American solar satellite. Studied prominences, corona, XUV and X rays of the sun.

**March 08, 1967** Launch of OSO 3 and 4, American solar satellites, see 7 March 1962.

**March 09, 1611** Johann Fabricius observed sunspots and conclude de rotation period of the sun.

**March 11, 1811** Birth of Urbain Jean Joseph Le Verrier (1811-1877), Verrier (1811-1877), French astronomer. Believer of the existence of planet Vulcan. (ref. Rc 1999)

**March 12, 1835** Birth of Simon Newcomb (1835-1909). He used carefully analyzed measurements of stellar and planetary positions to compute motions of the sun, moon, planets, and their satellites. Measured distance to the Sun.

**March 14, 1879** Birth of Albert Einstein (1879-1955), American theoretical physicist, mainly known for his relativity. (Ref. Rc 1999)

**March 15, 1713** Birth of Nicolas Louis de Lacaille, French astronomer. Did measurements of the parallax of the sun and the moon. Observed transit of Venus in 1761.

**March 15, 1975** Helios 1, German Solar mission reached the sun at 48 million km. That time a record.

**March 16, 1485** (Wednesday) "On the 16th day of March, at the 3rd hour during meal-time, the Sun was totally eclipsed". Achilli Pirmini Gassari : Annales Augustburgenses (ref. PG 3/99).

**March 17, 1846** Death of Friedrich Wilhelm Bessel (1784-1846), German astronomer and mathematics. Studied precession, nutation, aberration and inclination of the ecliptic. Known for the Bessel elements needed to calculate solar eclipses.



(Continued on page 4)

## ECLIPSE CALENDAR

**March 18, 0489** T'ai-ho reign period, 13th year, 2nd month, day i-hai, the first day of the month. The Sun was 8 fifteenths eclipsed. Wei-shu, chap. 105 (ref. PG 3/99).

**March 18, 1988** Patrick Poitevin observed on his birthday his 5 th central eclipse in the Philippines. In General Santos, Philippines totality was 03m25s local, all birthday cards welcome!!!!

**March 18, 2360** The next total solar eclipse on Everest will be on march 18th 2360 (totality : 94 sec) and the last one occurred on Jan 18th 1898 (65 sec). Everest will experience a 97% eclipse during the total of 2009. Ref. PA/MS 5/00

**March 20, 0071(?)** The Greek philosopher and biographer Plutarch gives a vivid account of a total eclipse in one of his dialogues entitles The Face on the Moon. In this same work, he also makes a brief reference to the corona (ref. PG 3/99).

**March 20, 1140** (Wednesday) "There was an eclipse of the Sun throughout the whole of England, as I have heard...". Willemi monachi Malmesburiensis Historia Novella, lib II; Potter (1955, pp 42-43) (ref. PG 3/99).

**March 21, 1762** Death of Nicolas Louis de Lacaille, French astronomer. Did measurements of the parallax of the sun and the moon. Observed transit of Venus in 1761.

**March 21, 1928** Death of Edward Walter Maunder F.R.A.S.. Born: 1851 April 12, Middlesex, England and died: 1928, March 21, Greenwich, London, England. Ref. AK 5/00.

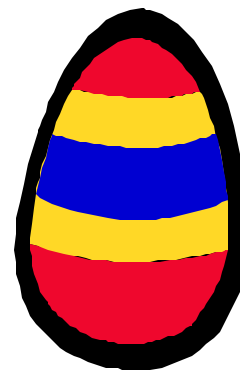
**March 22, 1868** Birth of Alfred Fowler (1868-1940), British astronomer and physicist. Studied spectra of the Sun. (Rc 1999)

**March 23, 1938** 1492 Oppolzer 1938 FL. Minor Planet discovered 1938 March 23 by Y. Väisälä at Turku. Named in honor of Hofrath Prof. Theodor Ritter Oppolzer (1841-1886), professor in astronomy in Vienna and author of the monumental "Canon der Finsternisse".

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

**March 30, 1882** Oceana 224: Minor planet discovered 1882 March 30 by Johann Palisa at Vienna. Named for the Pacific Ocean. The discoverer communicated from Honolulu on return from the solar eclipse expedition of May 6, 1883 that Governor von Dessarts of Tahiti has named this planet. BAJ CIR 210 (1883) Ref. VK 6/97

Best regards, Patrick



## CORRECTION

From: Gerard M Foley <gfoley@columbus.rr.com> To: <SOLARECLIPSES@AULA.COM> Sent: Friday, March 02, 2001 4:20 PM Subject: Re: [SE] Solar Eclipse Calendar for March

>March 03, 1956 Death of Willem H. Keesom, Dutch physician. Researched on lower temperature whereas he brought helium in solid condition (1926). He discovered the two kind of helium (Helium I and II). In 1942 he wrote the book Helium. Born in 1876. Ref DD 3/99

Willem Keesom was a physicist, not physician (medial doctor).

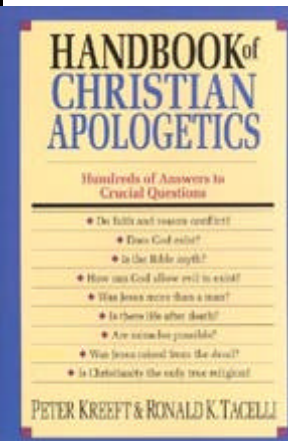
Gerry K8EF

## ECLIPSE CALENDAR

From Michael Gill

Hi Patrick, Regarding your December Eclipse Calendar - you have entries for December 22nd 1870. Below, find details of an eclipse one Metonic cycle later - December 22nd 1889 - for possible inclusion in your Eclipse Calendar

CATHOLIC ENCYCLOPEDIA: Stephen Joseph Perry



Stephen Joseph Perry, Born in London, August, 1833; d. 27 Dec. 1889. He belonged to a well-known Catholic family. His schooling was first at Gifford Hall, and then at the Benedictine College, Douai, where he proceeded to Rome to study for the priesthood. Having resolved to enter the Society of Jesus, he entered the novitiate (1853-5) first at Hodder, and then at Beaumont Lodge, after which he pursued his studies at St. Acheul, near Amiens, and at Stonyhurst. In consequence of his marked bent for mathematics, he was sent to attend the lectures of professor De Morgan, in London, and those of Bertrand, Lionville, Delaunay, Cauchy, and Serret, in Paris. In the autumn of 1860 he was recalled to Stonyhurst to teach physics and mathematics, likewise taking charge of the observatory. In 1863 he commenced his theological studies at St. Beuno's, N. Wales, and was ordained in 1866. He resumed his former duties at Stonyhurst, which during the rest of his life were uninterrupted, save by special scientific engagements. In company with Father Walter Sidgreaves, he made magnetic surveys, in 1868, of Western, in 1869 of Eastern, France, and in 1871 of Belgium. In 1870 he went in charge of a government expedition to observe a solar eclipse at Cadiz; at Carriacou (West Indies) in 1886; in Moscow in 1887; and at the Salut islands in 1889, on which journey he lost his life. In 1874

he headed a party similarly sent to Kerguelen in the South Indian Ocean, to observe a transit of Venus, when he also took a series of observations to determine the absolute longitude of the place, and others for the magnetic elements, not only at Kerguelen itself, but, on his way to and fro, at the Cape, Bombay, Aden, Port Said, Malta, Palermo, Rome, Naples, Florence, and Moncalieri. He likewise drew up a Blue-book on the climate of "The Isle of Desolation", as Kerguelen was called by Captain Cook. 1882 he went again with W. Sidgreaves, to observe a similar transit in Madagascar, and he again took advantage of the occasion for magnetic purposes. In 1874 he became a Fellow of the Royal Society. At Stonyhurst, while he greatly developed the meteorological work of the observatory, and in the province of astronomy made frequent observations of Jupiter's satellites, of stellar occultations, of comets, and of meteorites, it was in the department of solar physics that he specially laboured, particular attention being paid to spots and faculae. For observation in illustration of these an ingenious method was devised and patiently pursued. Father Perry was moreover, much in request as a lecturer. He died while actually performing the duty assigned to him in conducting an eclipse expedition in the pestilential group misnamed the "Isles de Salut". The observation on this occasion was exceedingly successful, and Father Perry, though already severely indisposed, managed to perform his part without interruption. As soon as it was over, however, he became alarmingly worse, and having gotten on board the H.M.S. "Comus", which had been detained for the service, he died at sea five days later, 27 Dec., 1889. He was buried in the Catholic cemetery at Georgetown, Demerara. An account of his life and scientific works by CORTIE is published by the CATHOLIC TRUTH SOCIETY. JOHN GERARD Transcribed by M. Donahue The Catholic Encyclopedia, Volume XI Copyright © 1911 by Robert Appleton Company Online Edition Copyright © 1999 by Kevin Knight Nihil Obstat, February 1, 1911. Remy Lafort, S.T.D., Censor Imprimatur. +John Cardinal Farley, Archbishop of New York

## GENERAL TOPICS



### THE FIRST ECLIPSE MAP

From: Jeff Batten <jeff.batten@csun.edu> To: <solaRECLIPSES@AULA.COM> Sent: Tuesday, February 06, 2001 11:40 PM  
Subject: [SE] First Eclipse Map?

Hello, Does anyone know when the first eclipse map was produced that showed the ground track of a TSE? With Start Times, etc. Who made the calculations? 18th Century? Thanks, Jeff

From: <Jay.M.Pasachoff@williams.edu>

Edmond Halley was the first to produce such an eclipse map with the ground track, for the eclipse of 1715. I wrote an article about it: 1999, "Halley and his maps of the total eclipses of 1715 and 1724," *Astronomy & Geophysics* (Royal Astronomical Society), 40, 18-22, April. I also had a longer piece about it: 1999, "Halley as an eclipse pioneer: his maps and observations of the total solar eclipses of 1715 and 1724," *Journal of Astronomical History and Heritage*, 2(1), 39-54, June. A French discussion appeared in: 1999, "Halley et ses cartes d'eclipses totales de 1715 et 1724," *Ciel et Terre*, 115, mars-avril, 51-56. Jay Pasachoff, jay.m.pasachoff@williams.edu

From: Govert Schilling <mail@govertschilling.nl>

Jeff: I believe it was the quite famous British map of the April 1715 eclipse, compiled by Edmond Halley, but I'm not completely sure. --Govert,Govert Schilling

From: J.P. van de Giessen <jpvdgiessen@gelrevision.nl>

Jeff, and all eclipse-lovers, First TSE chart was from Edmund Hally in 1715, but I found a picture (<http://www.ethbib.ethz.ch/whs/sonne02.html>) from 1707 of the eclipse of 12 May 1706 in the Swiss with in it a small chart of the Swiss and Italia, and some parts of the chart darkened. Not exactly a TSE-chart but one of the first drawings of an eclipse with a chart. Jan Pieter van de Giessen

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## GENERAL TOPICS

From: Michael Gill <eclipsechaser@yahoo.com>

A publication on the subject of early eclipse maps was mentioned on the SEML before.

It is 'The Shadow of the Moon' by Geoff Armitage, available through Map Collector Publications in the UK... <http://shop.mapcollector.com/product19000165.html?session=721065447127> Michael Gill.

From: Patrick Poitevin <patrick\_poitevin@hotmail.com>

See also the book THE SHADOW OF THE MOON, British solar eclipse mapping in the eighteenth century by GEOFF ARMITAGE. Published by Map Collector Publications Ltd., 48 High Street, Herts HP23 5BH, England. ISBN 0-906430-17-8. Published 1997.

A wonderful book about all eclipse mapping. Worth while indeed. Geoff Armitage has been curator in the Map Library, The British Library, for ten years. He acquired an interest in eclipse mapping while researching a series of such maps for possible purchase by the Map Library and discovered that there was a definite lack of written material about them. Best regards, Patrick

From: J.P. van de Giessen <jpvdgiessen@gelrevision.nl>

For a picture of this chart see <http://www.mapforum.com/bleclip.htm>

Further I found some information on the site <http://www.astro.uu.nl/~wwwzenit/eclipsweb/eclips1715.html> (in Dutch or <http://www.teylersmuseum.nl/engels/archief/zonsverduistering.html> in English)

Jules Verne wrote about this eclipse in his book "From the Earth to the Moon" in chapter 20 (<http://www.literature.org/authors/verne-jules/earth-to-the-moon/chapter-20.html>) Jan Pieter van de Giessen



### The British Library, The Shadow Of The Moon, An Exhibition Of British Solar Eclipse Mapping In The Eighteenth Century.

The exhibition is curated by Geoff Armitage, author of the recent book of the same title, copies of which are available for purchase in the Library's Bookshop. The exhibition is located in the lobby at the entrance to the Maps Reading Room on the 3rd floor of the British Library at St Pancras, 96 Euston Road, London NW1 2DB (nearest tubes: Kings Cross/St Pancras or Euston). Additional examples of eclipse mapping will also be on display in the "Treasures of the British Library" in the Ritblat Gallery on the upper ground floor for the next few weeks, where there are other maps on permanent exhibition. Map Library is open Monday 10-5, Tuesday to Saturday 9.30-5; the Library building is open seven days.

#### INTRODUCTION

Although nowadays we regard eclipses of the sun as natural albeit spectacular astronomical events, even as late as the eighteenth century they were thought to be the work of the devil. Eclipses have been predicted and diagrams drawn of them from at least the time of Aristotle and Claudius Ptolemy, but true eclipse maps, in the sense of geographical maps showing the paths of eclipses are a phenomenon of the eighteenth century onwards. Diagrams of solar eclipses occur in the Renaissance versions of Ptolemy's astronomical work the Almagest and, for example, Peter Apian's Cosmographicus first published in 1524. Accurate predictions, however, did not emerge until Edmond Halley (1656-1742) revolutionised astronomy and introduced the eclipse map and many other scientific thematic maps which influenced map-makers for the rest of the century and beyond.

1 Letterpress broadside map predicting the annular eclipse of 18 February 1737 by John Haynes. Although this is rather crudely engraved it is an unusual example of a very decorative eclipse map in colour.

Maps CC.5.a.59.

2 This complicated-looking geometrical diagram by Joseph Crosthwait shows how the 1715 eclipse would appear in the London area. The geographical type of eclipse map was much easier to understand and therefore more successful.

Maps \*23.(1.).

3 A broadside by Thomas Taylor for the 1724 eclipse reflecting the fairly sophisticated nature of these separately sold sheets.

*(Continued on page 8)*

## GENERAL TOPICS

It contains detailed information, written and visual, about how and why an eclipse occurs. The attractive view at top right shows people observing a total solar eclipse. Maps (unallocated).

4 The first ever eclipse map, by Edmond Halley, predicting the eclipse of 1715. Halley also made history by predicting the timing to within four minutes. The heavily shaded oval disc represents the umbra or moon's shadow.

Maps \*23.(2.).

5 Detail of a solar eclipse on John Speed's world map from A prospect of the most famous parts of the world (1627). Although this is decorative and illustrates the cause of solar eclipses, it is not particularly informative.

Maps \*920. (48.). (Photocopy).

6 Diagram of a solar eclipse from the Almagest by Claudius Ptolemy. This was published in 1537 but the information dates back to Ancient Greece. Eclipses have been scientifically observed from Antiquity particularly for their use in determining longitude.

Maps C.c.2.(3.). (Photocopy).

7 Chart by William Rogers (1738) showing the appearances and times of eclipses in London until 1760. Although no total solar eclipse is shown, the 1748 eclipse was total over Scotland and there were annular eclipses in 1737 and 1764 over Ireland and Scotland and south-east England respectively.

Maps \*23.(7.).

8 York mathematician George Smith invented this skewed projection to depict the path round the globe of the 1737 eclipse. The map also includes digit lines and double circles to indicate the appearance of the sun at various locations.

Maps \*23.(10.).

9 Laurie and Whittle. 'Multi-track' retrospective eclipse map showing the tracks of the 1715, 1724, 1737, 1748 and 1764 eclipses, published in 1794. The 'Century of eclipses' was rounded off with maps such as these., but the eclipse paths are very approximate.

Maps 177.e.2.(10).

10 Map by Charles Desnos predicting the annular eclipse of 1764 over Europe. This is a rare example of black and sepia colour printing in the 18th century, achieved by using two separate copper plates. The map also features digit lines and a decorative cartouche.

Maps 185.m.2.(3.).

11 Map predicting the 1737 annular eclipse by self-taught Durham astronomer Thomas Wright. This map is very accurate and in the classic Halley tradition, but with the addition of 52 double circles to indicate the amount of obscuration of the sun in different locations.

Maps 177.d.1.(19.).

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### **The solar eclipse over Switzerland**

On 12 May 1706 there was a total solar eclipse which was visible all over Switzerland. The eclipse was described in various chronicles.

Here a sketch from "Beschreibung der Natur-Geschichten des Schweizerlands" (Zürich, 1707) of Johann Jakob Scheuchzer

Totality was described as approx. 4 minutes in "Memorabilia tigurina" of Hans Heinrich Bluntschli (Zürich, 1742):

"An. 1706, den 12 Mey, ware die noch in frischem Angedenken erschrockliche Sonnen-Finsternuss, welche um 8 Uhr 45 Min. ihren Anfang genommen, das Mittel, oder da sie am grössten ware, um 10 Uhr, das Ende um 11 Uhr, in welcher Zeit die Sonn von dem Mond, gleich als mit einem Vorhang völlig bedeckt worden, und also ihren Schein gänzlich verlohren, so gar, dass auch die Sternen zum Vorschein kommen. Man sahe um 10 Uhren keine Arbeit mehr zu verrichten. Das Geflügel begab sich in die Ruhe und Nester, und sahe man auf dem Weinplatz die Fledermäuse herum fliegen. Auf diese Finsternuss ist ein sehr heisser Sommer gefolget, und ist alles an Wein, Früchten und Obs wohl gerathen."





## GENERAL TOPICS

From: Thomas Hockey <Thomas.Hockey@UNI.EDU> To: <HASTRO-L@WVNVM.WVNET.EDU> Sent: Friday, February 02, 2001 3:11 AM Subject:

### **Astronomical Image "Hall of Fame"**

Dear HASTRO-L, Here is a fun one: The Massachusetts Institute of Technology is putting together an exhibit that, in part, shows "the historical evolution of astronomical images and imaging techniques." They want some suggestions for images to include (and on where prints might be obtained). So, what do you think are some of astronomy's "greatest hits"--in pictures? Thomas Hockey, Professor of Astronomy, UNI, MIT '81

From: Bill Donahue

They should certainly have Kepler's account of pinholes (Optics, ch. 2) and the eclipse instrument described by Kepler using pinhole projection (Optics, beginning of ch. 11). See my recently published translation (info at [www.greenlion.com](http://www.greenlion.com)). And of course Hevelius's epochal moon map. Bill Donahue

From: Rolf Sinclair <rolf@SANTAFE.EDU>

Of course, some famous firsts in ground-based astronomical photography: the moon, a solar eclipse, a planet, and so forth. And the first photograph taken from above the atmosphere from a satellite. All the rest follow from those. The discovery photo of Pluto -- the first and possibly the last time a planet was discovered photographically by an observer. There are some drawings made from telescopic observations that should be included -- in particular, Galileo's chance observation of Neptune. There are so many here that again one would have to settle on "firsts". There is a movie film of an eclipse taken from a plane over South America in the 1920's -- again, likely a first. A print is at the Am Museum of Natural History, NYC. Rolf Sinclair

From: Merry Maisel <maisel@SDSC.EDU>

Serge Koutchmy did some very clever pix of the sun in "eclipse" (from Skylab) with an H-alpha sun over the "moon." And was it Dennis DeCicco that did the analemma? Anyway, there must be lots along that line... Merry Maisel

From: James Caplan <james.caplan@OBSERVATOIRE.CNRS-MRS.FR>

This subject seems very close to that which was covered last year by an exhibition at the Musée d'Orsay in Paris. The catalogue has been published as: Dans le champ des étoiles: Les photographes et le ciel 1850-2000 by Quentin Bajac, Aurélien Barrau, Denis Canguilhem, Agnès de Gouvion Saint-Cyr & Françoise Launay Published by: Réunion des Musées nationaux Paperback, 192 pages, 100 b&w and 90 colour illustrations. 190 FRF

I believe that this exhibition is now showing at the Staatsgalerie in Stuttgart and that the catalogue should be available in German. James Caplan, Observatoire de Marseille

From: John W. Briggs <jwb@HALE.YERKES.UCHICAGO.EDU>

Some quick thoughts regarding traditional photography:

E. E. Barnard's wide-angle work would be an obvious thing to consider, such as an image from "Atlas of Selected Regions of the Milky Way." (Perhaps ideally a plate showing dramatic dark nebulae.)

Keeler's work with the Crossley might also be considered.

Then there's that ultra-wide-angle shot of Halley in 1910 at Lowell Observatory.

I second the vote for di Cicco's famous time exposure. Another of his amazing shots also comes to mind. The occasion was back about 1983, when a very thin annular solar eclipse crossed the US East Coast. On a single piece of large-format color film, with one exposure and one neutral-density filter, DdiC simultaneously recorded 1) the extreme brightness of the solar photosphere; 2) the filtered photosphere; 3) Bailey's Beads; 4) the chromosphere; 5) beautiful prominences; 6) the inner corona -- all in a beautiful composition. It's an absolutely remarkable photo. But it didn't attract full potential attention, it seemed to me. Perhaps this was because it wasn't published in way to fully dramatize its unique beauty and information content. This one should have been an award-winner.

The late Edgar Everhart's remarkable work with hypered Kodak 2415 might be considered as well, but only a sample of this has been published. John W. Briggs.

## GENERAL TOPICS

From: Eli Maor <emaor@suba.com> To: <eclipse@hydra.carleton.ca> Sent: Thursday, February 15, 2001 5:22 PM Subject: [eclipse] **Thanks!**

Hi eclipses, .../... And now to eclipses. This week's N.Y. Times had a review of a recent book, "1831: Year of Eclipse," by Luois Masur. Of course the word "eclipse" jumped at me from the page, but I was disappointed to find out that the author uses the word only metaphorically to describe events in the southern states in the years prior to the Civil War. Nevertheless, an eclipse did indeed occur on February 12 of that year; it was an annular eclipse whose path was almost exactly identical to that of the famous annular eclipse of May 30, 1984. A nice map of the 1831 eclipse appeared in an almanac of that year: the path went in a northeasterly direction from just south of New Orleans to

Nova Scotia. I haven't seen the book yet, but according to the review, the author quotes several period newspapers that referred to the eclipse as a "fear of impending danger."

Thought you might be interested. All best - Eli Maor

From: <NinaSandy@aol.com>

Eli: How is the book about the transit of Venus? Is it available at Borders yet? Can I order it from you? How much? Thanks.

Perhaps a book about significant eclipses in the history of the USA might be interesting. The 1831 eclipse either started or stopped Nat Turner's slave uprising in Southampton, VA. S

From: Bryan Brewer <bryanb@earthview.com> To: <SOLARECLIPSES@AULA.COM> Sent: Wednesday, February 28, 2001 9:17 PM Subject: [SE]

### Ancient eclipses

Received this inquiry from an interested eclipse enthusiast:

"I have found an Indian pictograph resembling the eclipse sketched by Langley in 1878. How can I find any other sunspot minimum total eclipses that were visible in the southern plains (Oklahoma, North Texas, etc) for about the last 2000 years."

Can anyone help? -- Bryan Brewer

P.S. 7.0 earthquake here in Seattle 2 hrs ago was very ... interesting !?! No damage at my house.

From: Jean Meeus <JMeeus@compuserve.com>

Bryan Brewer asks for sunspot minimum total solar eclipses which took place during the last 2000 years. However, no sunspot data are known before A.D. 1750. Sunspots were discovered by Galileo, and their systematic observation did not begin until much later. Jean Meeus

From: <JohnLX200@aol.com>

I guess we'll have to instead go by solar eclipse drawings to figure out when the dates of solar min and solar max back through history occurred, from coronal shape? Has anyone already done this work? If so, how far back in time were they able to model it with confidence and without gaps? Any previous time periods when there were enough observations to again get calibrated? John Hopper

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

I should not dare to add to anything posted by Jan Meeus (thanks for all your published work), but here goes.

I think that some detectable phenomena are thought to be affected by the solar cycle. It may be tree rings. There is data of some kind that gives rise to the assertion that there was a "Maunder minimum", in medieval times, in which the solar cycle was much reduced in amplitude. I spent some time trying to fit the solar cycle to the gravitational potential of the planets at the location of the sun, based on the obvious fact that the Jovian year and the solar (half) cycle are roughly, but not precisely the same. The work was fruitless, but around the same time a paper was published (in "Science"?) claiming the discovery of another solar cycle around 175 years period, which predicted that the next maximum would be nearly absent. In fact the next maximum was one to the highest on record. So much for Fourier analysis of sparse data. This was before digital computers were widely available. For the planetary data I used the "Nautical Almanac", which was filed in the Library of the Franklin Institute in Philadelphia, Pa. The library held copies from the first publication, except for 1954 (and perhaps 1955). It turned out that they had been on the free list of the Naval Observatory from first publication until the economy drive of the Eisenhower administration, and that the library did not realize they would have to buy the volumes until they had failed to arrive for a couple of years. Gerry K8EF

## GENERAL TOPICS

From: Bob Morris <morris@sce.carleton.ca> To: SE from LRM <solareclipses@Aula.com> Sent: Thursday, February 22, 2001 3:31 AM Subject: [SE]

### Eclipses and the sea

Does anyone know of any legends relating eclipses of the sun (or eclipses in general) to mariners or sea legends? Fear of eclipses by mariners? Bob Morris

BTW, the one reference I was able to find is in Milton, about a ship being "built in the eclipse." Help would be appreciated here. LRM

From: J.P. van de Giessen <jpvdgiessen@gelrevision.nl>

See Milton's Paradise Lost, Book 1 line 597 ([http://www.dartmouth.edu/research/milton/reading\\_room/pl/book\\_1/](http://www.dartmouth.edu/research/milton/reading_room/pl/book_1/))

Further I know a legend about the Retezat Mountains (the Mountain of the Eclipse) they are the highest places in Europe from where you can watch the dragon that swallows the sun during the eclipse. Legend says that if you make noise, the dragon will turn his attention from the sun to you and there's no one up there to protect you! These mountains are in the neighbourhood of the Black Sea.

See also <http://www.eclipse-chasers.com/egypt4.htm> : A famous Hittite legend says that, one day, the Sun god was MISSING, the Weather God sent messengers: "Go! Bring the Sun God" (1). In the end of the myth, the Sun God returns back to the temple, and food and drink were offered to him (2). I believe this myth was inspired by the total eclipse of the Sun. Also, in the Hittite myths, the Sun god "comes from the sea" (3). This is much similar to the Egyptian concept, which was depicted from solar eclipses (4). Also, the Hittite Sun-god was depicted with fish on his head (5). This could have been the way the Hittites interpreted the solar prominences seen through totality. Jan Pieter van de Giessen



From: Patrick Poitevin <patrick\_poitevin@hotmail.com>

Some ship or sea related topics out of my monthly Solar Eclipse Calendar are:

May 12, 1706 An English ship captain named Stannyan, on vacation in Switzerland, reports a reddish streak (chromosphere? prominence?) along the rim of the Sun as the eclipse becomes total.

August 05, 1766 Eclipse observed southeast of Newfoundland: Eclipse Island (part of Burgeo Islands). Mentioned in the Chronology of Captains James Cooks (1728-1779) travels by Paul Capper. (ref. ENB 8)

September 28, 1791 Captain George Vancouver observed this Wednesday morning a partial solar eclipse. He went on the name the barren rocky cluster of isles, by the name of Eclipse Islands. The actual date was September 27, 1791 at 22h39m (local time Sep. 28, 6h39m) with a mag. of 0.936. Patrick Poitevin observed at about the same place the partial eclipse of September 2, 1997 (mag. 0.551) between the clouds.

December 30, 1777 Eclipse observed by Captain James Cook (1728-1779), actual date December 29, during his 3rd travel. Observation at Eclipse Island but currently called Cook Island (at the entrance of the lagoon surrounded by Christmas Island in the Pacific). It was a partial eclipse of max. 30% and at about 59 degrees altitude. (Ref. ENB 8)

Best regards, Patrick

## GENERAL TOPICS

From: Patrick Poitevin <patrick\_poitevin@hotmail.com> To: SE Mailing List <SOLARECLIPSES@AULA.COM>  
 Sent: Sunday, February 04, 2001 7:03 PM Subject: [SE]

**Eclipse Reference: March 2001 Sky and Telescope**

Hi, Sky and Telescope, March 2001 has following Solar Eclipse related items:

Letters: A Tale of Two March 7th Eclipses by Joe Rao (see also SENL latest issue for some same communications about it)

Mission Update by Jonathan McDowell: Sun and solar-terrestrial relations spacecraft's

Today's Science of the sun - part 2 by Carolus J. Schrijver and Alan M. Title

Starspots by Mark A. Garlick

Solar Images to the IMAX by Stephen P. Maran (see also latest SENL communications)

Sky Wise: Jovian Skies by Jay Ryan

Observers Notebook: a Christmas Partial Ec lipse by Gary Seronik

Best regards, Patrick

From: Patrick Poitevin <patrick\_poitevin@hotmail.com> To: SE Mailing List <SOLARECLIPSES@AULA.COM>  
 Sent: Tuesday, February 13, 2001 7:56 PM Subject: [SE] Reference: BAA Journal February 2001

Dear All, Please find herewith following solar eclipse related topics in the BAA Journal of February 2001. See webpage <http://www.ast.cam.ac.uk/~baa> and <http://www.star.ucl.ac.uk/~hwm>

The Antwerp amateur/professional solar eclipse conference, October 2000 by Joanne Edmonds (pages 6 and 7 with several pictures).

William John Macdonell and the development of astronomy in New South Wales by Wayne Orchiston (pages 16 and 17 about his solar eclipse observations and pages 17 to 19 about transits of Mercury and Venus).

Keep those solar eclipse related messages coming. Best regards, Patrick

From: Dale Ireland <direland@drdale.com> Cc: Solar Eclipse List <SOLARECLIPSES@AULA.COM>; Videoastro <videoastro@egroups.com>  
 Sent: Friday, February 02, 2001 10:33 PM Subject: [SE]

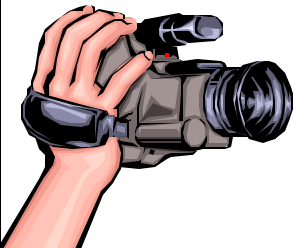


**cheap monitor**

Someone made a post about the cheap monitors available at Circuit City stores. I checked it out, pretty good deal for \$24.95 !! It will give you a much better way to check your video recording in real time vs the camcorder viewfinder. It is by "Action" and it has audio video input and monitor mode, runs on 12v or 12v via an included AC adapter or it holds 10 D cell batteries. also ahs a charging input in case you want to use rechargeable batteries. Pretty good deal for \$24.95, and you can watch regular broadcast television if it is cloudy. They also have a color model for \$149. Dale

## GENERAL TOPICS

From: Massimiliano Lattanzi <m.lattanzi@unesco.org> To: <SOLARECLIPSES@AULA.COM> Sent: Monday, February 26, 2001 9:19 AM Subject: [SE]

**DV and Eclipse (T-conv)**

Hi all, Is there anybody planning to film the eclipse with DV cameras? I would be keen in sharing some points of view and techniques. I shall be using a Sony

TRV-900 and was wandering whether someone has a specific experience on exposure times to use.

Furthermore, has anybody experience with the Sony Teleconverter 2x VCL-R 2052? With a Kenko equivalent? With a longer teleconverter (e.g. 3x)? Thank you in advance Max

From: <Jay.M.Pasachoff@williams.edu> To: <SOLARECLIPSES@AULA.COM> Sent: Monday, February 26, 2001 1:32 PM Subject: [SE] DV and Eclipse (T-conv)

We used a Canon XL-1 (full size) and a Canon Elura (small size) to make DV movies of the 1999 eclipse from Romania and are happy with the results. We did not use a teleconverter. We found that the built-in zooms were enough. Also, adding more glass surfaces can lead to internal reflections. It is important to turn off all automatic functions before the eclipse. We hope to again make DV movies in Zambia. Jay Pasachoff

From: Eiichi Wada <ewada@nikkeibp.co.jp>

Hi Max, As you might know, we LIVE! ECLIPSE took lots of eclipses image by video camera. Exposure time depends on magnitude of eclipse. So we always adjust it watching a monitor screen. If you use film camera, you cannot see the result until development. But when you use video camera, you can check it at realtime:-)

> Furthermore, has anybody experience with the Sony Teleconverter 2x VCL-R 2052? With a Kenko equivalent? With a longer teleconverter (e.g. 3x)?

I think you should use Sony's teleconverter. If you use 3rd vendor's teleconverter, you may not see the edge of picture. Longer teleconverter is not available. Eiichi Wada, LIVE! ECLIPSE

From: Massimiliano Lattanzi <m.lattanzi@unesco.org>

Jay, What zoom were you using (and its equivalent focal

length on the 24x36)? If you turned the auto off, what shutter speed (and f/value) did you use for prominences, corona, beads, etc? Any MPEG on line? Thank you Max

From: Massimiliano Lattanzi <m.lattanzi@unesco.org>

Hi, I agree that it can be adjusted in real-time but, as many others, I shall be shooting slides in real-time... ;-) Thank you for the input on the Sony 2x TC. Any others? People say a lot of good things of the Kenko. Is anybody able to find out which focal length would better use the resolution of the CCD? I would rather optimize for prominences than corona. Any thought Max

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

Don't forget to look at the eclipse! Good luck Gerry K8EF

From: <Jay.M.Pasachoff@williams.edu>

I used the maximum optical zoom (not the digital zoom) for each. I varied the shutter speed mid-way through the eclipse; I found the slowest possible shutter speed was best. I used the regular shutter speed for prominences. For beads and diamond ring, any shutter speed is good; it doesn't matter which. I have no MPEG on line.

From: Dale Ireland <direland@drdale.com>

Hi Why did you vary the shutter speed? I thought that camera had an iris control? Dale

From: Massimiliano Lattanzi <m.lattanzi@unesco.org>

Gerry, That is solved by using a totally transparent focusing screen for photomicrography and a 6x viewfinder. Is basically as looking through a regular eyepiece. Warmly recommended... Max

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

>Longer teleconverter is not available.

oh yes, there is. I have a x5 teleconverter. But the quality is very poor, it is a cheap plastic model. I use it to get the crescent of Venus (next month), but not the eclipse.

From: <Jay.M.Pasachoff@williams.edu>

You don't want to use the automatic iris control, since it will regulate itself for the total brightness, most of which is in the bright innermost corona. The corona falls off by a factor of over 100 in the first solar radius. So to show more

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## GENERAL TOPICS

corona, you want a longer exposure than is given automatically. That is why I recommended shutting off the automatic controls. I had a chapter on videotaping solar eclipses in my "Cambridge Eclipse Photography Guide" (Cambridge University Press, 1993), based on an article I wrote jointly with Fred Espenak at that time.

We put together a half-hour edited video (including some scenes from our scientific eclipse expedition to Romania), including the two edited eclipse segments. I could mail a copy out to anybody who wants it for, say, a \$10 fee to cover videotape, duplication, and postage.

From: Massimiliano Lattanzi <m.lattanzi@unesco.org>

Is that the one advertised at the link hereunder? [http://www.aaacamera.com/video\\_lens\\_kut500.html](http://www.aaacamera.com/video_lens_kut500.html)

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

Yes, this is the model. It is compact and lightweight. But low quality. But it is fine for some specific views, specially for bright objects (at x5, you lose lots of light!). Filming the Moon is quite okay.

here is an example of the Moon with Sony Hi8 cam with x18 zoom, plus x5 teleconverter: <http://eclipse.span.ch/moon040299am5.jpg>

By the way, when I was shopping around for teleconverters for my video cam a few years ago, I remember seeing a German made x5 teleconverter which was much more expensive but probably of higher quality (metallic, no plastic, and glass optics). Maybe it was by Hama? And there was also a zoom converter, x2 - x5.

For the solar eclipse, a x5 teleconverter may be interesting for partial phases with sunspots. Or for the sunset eclipse green flash :-)

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

Have a look at <http://home.tronet.de/g.dittie/eclips99/eclips99.htm> for high-resolution video stills of the last eclipse (the movie itself is breathtaking in its detail). This videographer is actually planning to increase the scale again in 2001 ... Daniel

From: Scott <hdemann@yahoo.com>

Hello All, Does anyone have experience with Eagle Optics? I am considering a set of binoculars from them. Thanks, Scott

From: Dale Ireland <direland@drdale.com>

Yes, but I was referring to the manual iris control, doesn't that model have a manual iris control? That is what I use for all my exposure changes during eclipses. I think you lose image detail by changing the shutter speed to anything but the basic 1/60. I think there is no real shutter but rather a sampling of the chip. I will have to check into that. I agree that you never use the auto-iris since it tends to underexpose eclipsed sun images and add graininess to totally eclipsed landscape shots. The auto-iris can be used for landscape but only with certain cameras. Most low and mid level consumer camcorders will switch to the grainy high gain mode as light levels drop if you use auto-iris. You must have a camera with a separate high gain switch (which you never use). My old Sony V110 8mm will do this, so I can record the landscape as totality approaches and when the light level drops below the camera minimums the scene just gets darker rather than grainier. Unfortunately it is just 8mm not even hi8, circa 1987. Does anyone know of a digital camera that will do this? Not go into high gain mode automatically even when the auto exposure is turned on? Dale

From: Don Estes <donestes@donestes.com>

Well, I'm not sure it qualifies as experience, but I took my brand new DV camera to Hungary for the eclipse, and discovered a few disconcerting things that I should have known but didn't think of.

First, digital media is pretty flat compared with analog film, particularly some of the extended range films. (In 1970, we had some special Eastman Kodak film with 3 layers, 400 ASA, 40 ASA and 10 ASA; the B&W image was developed using C-22 chemistry, and that was dynamite!). What I did right was to use the DV camera for mood and general ambiance, but use my still cameras for real photography.

Second: practice, practice, practice under pressure. I forgot to zoom out. (sounds of intense embarrassment).

Third, remember that long zooms magnify all motion. One of my friends had 5 gallons of water as a brace and set to damp any motion. (Also, he wouldn't let my kids within 30 feet, but that's another story).

Fourth, for exposure, I just put in on manual and ran the full range (about 10 stops) of what it would do for images of the eclipsed disk, but mostly I just set it for a pleasing image (easier than I expected). I did see Venus with the eclipsed sun on the video.

I think it would be very dramatic to fix the exposure of the surroundings at about 10 minutes before totality and let the image get really dark. This would have been particularly good in Hungary where the shadow was not so wide, and the sky was

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## GENERAL TOPICS

never really black. Hope it helps. Don

From: Don Estes <donestes@donestes.com>

My Canon Ultura allows me to switch off the high gain mode in the setup options.

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

Yes, I will be videoing the eclipse on DV, as I have done for the last 2 eclipses. Basically, manual focus (you can use the infinity focus push in the 900 to test your focus), and manual exposure. Leave shutter speed at 1/60, but vary the f/stop. Of course, use a filter for partials. Take filter off just before 2nd contact, replace after 3rd contact. Vary the f/stop to expose different parts of the corona during totality. There is no correct exposure, but you can see your results on the LCD screen in real time. That is the advantage of video in terms of exposure, what you see is what you get. Email me for any more details. Joel M. Moskowitz, M.D. 7 (total) eclipses and counting

From: Mike Simmons <msimm@ucla.edu>

>Does anyone have experience with Eagle Optics?

First class all the way. Knowledgeable (astronomy and birding), great service, good prices. Highly recommended. Mike Simmons

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

Sure, the Canon XL1 allows you to not only select manual gain, but the level of the gain as well. However, if you use this camera for surroundings during the eclipse, leave the auto gain on for this. The XL1 has an extremely clean gain, and due to the falling light levels, the increasing gain will give a good image, yet still show the darkness of totality. I've done this twice with extremely good results. Joel M. Moskowitz

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

Oh, in addition, I've been videoing eclipses since 1991 (all of them), and since the 1994, I've been using fully pro cameras, first in Hi8, then in DVCAM. In 1998 and 1999, I used a SONY DSR130 for the eclipse and a Canon XL1 for the surroundings. This year, I replaced my DSR130 with a slightly smaller and lighter DSR500. The other important thing to remember is to have plenty of battery power.

From: Dale Ireland <direland@drdale.com>

Hi Are you saying that the XL1 never goes to a grainy high gain mode or just that in total eclipse landscapes it never reaches that level due to its low minimum lux level? If you try

to get an image in a really dark room using auto gain (auto-iris, auto exposure) will it get grainy? I have found that landscape scene illumination during totality is widely variable from eclipse to eclipse. My Sony tr81 went "grainy" in Bolivia but not in Hungary, guess it got just a bit darker in Bolivia. Dale

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

It does go into high gain mode during totality, but it is very clean. The pros that use the XL1 have remarked very favorably about its clean low light image. One of the reasons has to do with the lower pixel count in its CCD's. Less pixels gives less noise. I am going to take a small segment of either my 1998 or 1999 video and make a Quicktime DV clip that I can attach to an email so you can judge for yourself. Just give me a few days to find the time.

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

If you plan to do high quality close up video of the eclipse in Africa, here's a special offer for those who have a Canon XL-1 video camera, where you can change the lens: I own a (very expensive) Canon 400mm f/2.8 EF - L USM lens, which you can use on the XL-1 cam. Since the video conversion gives a high factor (I believe about x7 ?) this results in about 2800mm focal length. And: I also have the x1.4 and x2 teleconverter for this lens. If you use the x2 lens with the 400mm lens, you'll get a focal length of 5600mm. Now, I do not use that lens much, I like to travel as light as possible. I won't take it to Africa. So if you have a XL-1 cam and want to use my lens for the eclipse, contact me at olivier.staiger@span.ch, you might rent it or buy it. You can also contact me if you don't have the Canon XL-1 video cam but you use Canon photo camera with EF lenses and are looking for 800mm telelens (400mm plus x2 converter). The lens is heavy (over 6 kg) but I also have a sturdy Gitzo tripod which holds up to 10kg weight.

From: Eiichi Wada <ewada@nikkeibp.co.jp>

Hi Don, DV (actually Mini DV) compress images to 1/5. So detail of corona is lost unfortunately.

From: Eiichi Wada <ewada@nikkeibp.co.jp>

Hi Olivier, EF Adapter is x7.6. So when you use 400mm lens, it comes to 3040mm focal length. Eiichi Wada, LIVE! ECLIPSE

I have found that landscape scene illumination during totality is widely variable from eclipse to eclipse. My Sony tr81 went "grainy" in Bolivia but not in Hungary, guess it got just a bit darker in Bolivia. Dale

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## GENERAL TOPICS

From: Eiichi Wada <ewada@nikkeibp.co.jp>

Hi Olivier,

>>Longer teleconverter is not available.

>oh yes, there is. I have a x5 teleconverter. But the quality is very poor, it is a cheap

Well, I mean as of SONY products.

From: Eiichi Wada <ewada@nikkeibp.co.jp>

Hi Max,

>I agree that it can be adjusted in real-time but, as many others, I shall be shooting slides in real-time... ;-)

Oh, I understand your situation. Duration time is short, but thing is a lot.

>Thank you for the input on the Sony 2x TC. Any others?

I find a hi-magnitude teleconversion lens kit "VCL-FS2K" for TRV/TR/PC series. I have a TRV-900, but I've not know it. VCL-FS2K is x10 ability when you attach it to TRV/TR/PC series. It can also use as a telescope for nakid eye. 80mm x 122mm x 279mm. about 1180g. Only use at Maximum tele side. TRV-900's focal length is 492mm. Then it comes to 4920mm! This kit includes ; telescope body, eyepice for video cam, eyepice for nakid eye, basement, accessory shu adapter, carrying handle, carrying bag, telescope basement. I guess this basement may be good for attaching an image intensyfier to TRV-900. It costs 110,000 Japanese Yen! Unfortunately I can not find English web page of VCL-FS2K. I wonder Sony may not sell it outside of Japan. Following is a Japanese page URL. [http://www.sony.co.jp/sd/ProductsPark/Models/Current/VCL-FS2K\\_J\\_1/index.html](http://www.sony.co.jp/sd/ProductsPark/Models/Current/VCL-FS2K_J_1/index.html) I hope you can see a photo image.

>People say a lot of good things of the Kenko.

Kenko is a Japanese company and they don't sell TC for video in Japan. So I've not know they have TC for video until now. But now I find it in their English page. <http://www.thkphoto.com/catalog/kenko2.html>

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

I am not sure what is involved in putting your videos on this site <http://ova.zkm.de/> nor if the resolution of the resulting displays would be satisfactory. It appears, however, to be a kind of Photopoint for videos. The playbacks are through RealPlayer. Good Luck Gerry K8EF

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

Information about videotaping solar eclipses can be found at the

following links:

<http://www.mreclipse.com/SEphoto/SEvideo.html>

<http://www.mreclipse.com/Totality/TotalityCh12-4.html#Video>

The first link is based on an article that Jay Pasachoff and I published in Sky & Telescope after the 1990 eclipse in Finland. The second link to to a videography section of my chapter on eclipse photography in "Totality - Eclipses of the Sun."

I've been using a 4x Tokina teleconverter with various Sony camcorders (8mm, Hi-8 and digital-8) for ten years with good results. - Fred Espenak

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

Hi all, I had a problem with my email today. Some people responded to my last posting(s), but I lost them. I know one was about placing my video clip on a hosting site. I actually don't want to do this, as the compression for streaming video will destroy the effect that I was talking about. I really want the person interested in the quality of the video to see the original, so I would attach a short clip to an email. On another posting, someone mentioned that the reason DV video loses detail over film is because it is compressed 1/5. Actually, this is the compression algorithm used to reduce file size, but has nothing to do with loss of "detail" as compared to film. What is really involved here is dynamic range that can be recorded. The solar corona has an estimated dynamic range of 1,000,000 to 1. The human eye is about 100,000 to 1. Maximum film dynamic range is about 9 f/stops, or about 1,000 to 1. Video has about 5 f/stops, or about 100/1. This means that it can only record a bright object about 100 times brighter than the dimmest object it can record in the same frame.. This is a rather narrow dynamic range, and is very obvious when compared to film, and that is why video and film can never look like the eye sees the corona. DV has actually a lot of detail compared to analog video. The only formats (in video) with more detail is Digital Beta (or the equivalent) and Hi Definition. As this is eclipse related, but getting off topic, if anyone objects to using list bandwidth, you can email me privately.

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

Hi Dale, The clip is too large for the mailbox storage. I'm going to try to break it up into several smaller clips that I will send on successive days. You can then piece the together.



## GENERAL TOPICS

From: Evan Zucker <ez@MrTotality.com> To: <SOLARECLIPSES@AULA.COM> Sent: Thursday, February 15, 2001 5:05 AM Subject: [SE] **Glorious Eclipses:**

### **Their Past Present and Future**

I've been collecting eclipse books for many years, and it's not often I come across one I don't already own, let alone one I haven't seen before. But today I did.

I was browsing at San Diego Technical Books, Inc. (<http://www.booksmatter.com>) -- the mostly sell computer books -- and right by the front door they had several astronomy books on a rack. Prominent among them was a large format book entitled, "Glorious Eclipses : Their Past Present and Future."

It contains really beautiful eclipse photos. In fact, I immediately recognized that it was the perfect answer for my wife or parents when they ask me what I want for my birthday this year.

You can order it at:

<http://www.booksmatter.com/book.asp?isbn=0521791480>

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Evan H. Zucker

From: Bill Kramer

I recently purchased this book (thanks to a gift certificate from Amazon.Com) and it is wonderful - great pictures and very poetic writing about the beauty of eclipses and thrill of eclipse chasing. The color maps are great too. The kids love it for showing friends the maps of where we will be this coming summer. For some reason, color maps appeal more to them since the same maps have been available in the house for years (but in black and white)! -Bill Kramer

From: luca quick <lqecli@yahoo.fr> To: <solareclipses@Aula.com> Sent: Monday, February 26, 2001 8:48 PM Subject: [SE]

### **Saros/Inex number system**

Dear umbraphiles, I'm looking on information about the Saros number system and, if it exists, the Inex ( = 358 synodic months ) number system. Could anyone, please, explain me how the different Saros ( and Inex ) series are numbered? Which is the algorithm to attribute these numbers to the different eclipses? I think that I could find this information in "Periodicity and Variations of Solar ( and Lunar ) Eclipses" by Van den Bergh but this book is difficult to get ( it's out-of-sell ). Thank you a lot, Luca Q.

From: Andres Mejia Valencia <AndrMeVa@suramericana.com.co>

Dear Luca (umbraphiles, ummh - that´s a good one!) I think you´ll find "everything you want to know" about the saros and all related periods in the excellent book "Mathematical Astronomy Morsels" by Jean Meeus (published by Willmann-Bell Inc. - USA) but easily available through many Internet bookshops. You will not find the actual algorithms to calculate the saros in that book, but I certainly remember seeing a short program in Sky & Telescope some years ago and I´m pretty sure you will find the BASIC code for that program in their website. I hope that serves for your purposes. Best regards, Andres Mejia



## GENERAL TOPICS

From: Patrick Poitevin <patrick\_poitevin@hotmail.com> To: SE Mailing List <SOLARECLIPSES@AULA.COM> Sent: Wednesday, February 28, 2001 8:40 PM Subject: [SE] Einstein, Eddington and the 1919 Eclipse  
For those interested: From: **Leos Ondra Subject: Einstein, Eddington and the 1919 Eclipse**

Browsing through LANL (astrophysical preprint server) this evening, I was interested to find the paper 'Einstein, Eddington and the 1919 Eclipse' by Peter Coles (Univ. of Nottingham). Anyone interested can download postscript or pdf version at <http://arXiv.org/abs/astro-ph/0102462> Leos

From: Christian Steyaert <steyaert@vvs.be>  
> Paper: astro-ph/0102462 From: Peter Coles <peter.coles@nottingham.ac.uk> Date: Tue, 27 Feb 2001 10:27:58 GMT (92kb)

Title: Einstein, Eddington and the 1919 Eclipse Authors: Peter Coles (University of Nottingham, UK) Comments: 21 pages, 6 figures, to appear in Proceedings of International School on "The Historical Development of Modern Cosmology", Valencia 2000, eds V.J. Martinez, V. Trimble & M.J. Pons-Borderia, ASP Conference Series, in press. Uses newpasp.sty

The modern era of cosmology began with the publication of Einstein's general theory of relativity in 1915. The first experimental test of this theory was Eddington's famous expedition to measure the bending of light at a total solar eclipse in 1919. So famous is this experiment, and so dramatic was the impact on Einstein himself, that history tends not to recognize the controversy that surrounded the results at the time. In this paper I discuss the experiment in its historical and sociological context and show that it provides valuable lessons for modern astronomy and cosmology. \\ ( <http://arXiv.org/abs/astro-ph/0102462> , 92kb)

From: Michael Gill <eclipsechaser@yahoo.com>  
Peter Coles has written a book called 'Einstein and the Total Eclipse', published in 1999. The ISBN is 184046089X. Regards, Michael Gill.

From: Patrick Poitevin <patrick\_poitevin@hotmail.com> To: SE Mailing List <SOLARECLIPSES@AULA.COM> Sent: Wednesday, February 21, 2001 7:32 PM Subject: [SE] **Astronomy and Mathematics in the Ancient Near East**

For those who are back from the June 21 eclipse or stay home, here is another interesting conference on historical eclipse topics. Those who participated the Antwerp 2000 Solar Eclipse Conference, will remember John Steele.

> From: Larry Klaes <lklaes@BBN.COM> Subject: Under One Sky: Astronomy and Mathematics in the Ancient Near East

Under One Sky: Astronomy and Mathematics in the Ancient Near East

25-27 June 2001, The British Museum.

Archaeologically recovered materials from Egypt and Mesopotamia provide the earliest written sources of astronomy and mathematics known to us today. They reveal that already by the early second millennium BC advanced mathematical techniques had been developed to solve both practical and abstract problems. In the first millennium BC, Babylonian astronomers used developments of these mathematical methods to calculate planetary and lunar phenomena such as the dates of the first and last visibilities of the planets, and eclipses of the sun and moon.

This conference will provide a forum for the presentation and discussion of recent work on the history of astronomy and mathematics in the Ancient Near East. In addition to technical discussions of the methods of the ancient science, sessions of the conference will be devoted to exploring the relationship between astronomy and celestial divination, the role of astronomy in establishing absolute chronologies, and the legacy of Ancient Near Eastern science in neighbouring cultures.

For further information please contact one of the following:

John Steele, Department of Physics, University of Durham, South Road, Durham, DH1 3LE, Tel: 0191-3742139, Email: [j.m.steele@durham.ac.uk](mailto:j.m.steele@durham.ac.uk)

Annette Imhausen, Dibner Institute, 38 Memorial Drive, Cambridge, MA 02139, USA, Email: [aimhausen@dibinst.mit.edu](mailto:aimhausen@dibinst.mit.edu)

Christopher Walker, Department of the Ancient Near East, The British Museum, London, WC1B 3DG, Tel: 020-73238382, Email: [c.walker@british-museum.ac.uk](mailto:c.walker@british-museum.ac.uk)

Or visit the conference web site: <http://star-www.dur.ac.uk/~jms/UOS/Preview/index.html>

From: Daniel Fischer <dfischer@astro.uni-bonn.de> To: <HASTRO@WVNVM.WVNET.EDU>; <SOLARECLIPSES@AULA.COM>; <iran2000@egroups.com>; <mepco-list@egroups.com> Sent: Tuesday, February 13, 2001 12:18 PM Subject: [SE]

### The beginnings of astrophotography: an exhibition in Germany

Here is a little review of a most amazing exhibition still running in Stuttgart, Germany, which is of major interest to astronomy historians AND to eclipse enthusiasts (and almost every amateur astronomer). Should you come to within 500 kilometers of Stuttgart within the next month, there is no excuse not going there. Daniel Fischer

The beginnings of astrophotography: an exhibition in Germany

It can still be seen in the Staatsgalerie in Stuttgart, Germany, until March 11: "Dans le champ des étoiles - Les photographes et le ciel" or "Sonne, Mond und Sterne - Himmelsphotographien 1850-2000", a unique French show that contrasts modern art with pioneering celestial photography in the 2nd half of the 19th century. The latter is represented by a large number of rare original prints, remarkably well preserved - and with a technical and aesthetical power that blasts away nearly all of the contemporary attempts at grasping the Universe with photographic or related art forms. Unfortunately quite a number of the 19th century artefacts that were on display at the musée d'Orsay in Paris last year are missing in the Stuttgart version (but can still be seen in the lavishly illustrated catalog, available only in French); nonetheless the exhibit is definitely worth a visit for any amateur astronomer and sky photographer. And in particular for any eclipse enthusiast, as the early targets of photography in the sky were the Sun, the Moon and eclipses of both of them.

The first lunar photograph shown is from 1849, with rapid progress in quality within the next few years, the first partial solar and lunar eclipse images date from 1851 (July 28) and 1856, respectively - and the first sequence of a total solar eclipse was obtained in Spain on July 18, 1860. These stunning pictures - also for sale at the box office as a nice bookmark - began to convince astronomers that photography would soon replace drawing at the eyepiece as the recording technique of choice. With the much fainter Deep Sky, that would take a few decades longer, but already in 1900 German astrophotographer Max Wolf managed to overexpose the North America Nebula and the Milky Way in his image of Cygnus! Unfortunately the captions with most exhibits are poor, lacking all information about the optics employed, and there are some bizarre mistakes. But they cannot distract from the intrinsic value of this amazing exhibition, drawn from 30 collections in 6 countries: Even if you have seen some of the pioneering photographs in books, it's a v e r y different experience to see them as real prints. (Review by D. Fischer)

Some information on the exhibit and the Staatsgalerie is at [www.staatsgalerie.de](http://www.staatsgalerie.de)

While you're there, it's also worth to visit a small but nicely arranged exhibition on meteorites by Dieter Heinlein - [www.meteorites.de](http://www.meteorites.de) - at the nearby planetarium, [planetarium.stuttgart.de](http://planetarium.stuttgart.de)

From: Jean Meeus <JMeeus@compuserve.com> Sent: Monday, February 12, 2001 9:23 AM Subject: : **Delta T**

On 2001 January 1 the value of Delta T was 64.09 seconds.

The yearly increase of Delta T continues to decrease :

|            |               |                                    |
|------------|---------------|------------------------------------|
| 2000 Aug 1 | 63.98 seconds | 0.30 sec larger than on 1999 Aug 1 |
| 2000 Sep 1 | 63.99 seconds | 0.30 sec larger than on 1999 Sep 1 |
| 2000 Oct 1 | 64.01 seconds | 0.30 sec larger than on 1999 Oct 1 |
| 2000 Nov 1 | 64.04 seconds | 0.29 sec larger than on 1999 Nov 1 |
| 2000 Dec 1 | 64.07 seconds | 0.28 sec larger than on 1999 Dec 1 |
| 2001 Jan 1 | 64.09 seconds | 0.26 sec larger than on 2000 Jan 1 |

Jean Meeus

## GENERAL TOPICS

From: Victor Reijs <victor.reijs@MYSELF.COM> To: <HASTRO-L@WVNVM.WVNET.EDU> Sent: Sunday, February 18, 2001 1:02 PM Subject:

### Metonic cycle

Hello all of you, Who has the original text of the Metonic cycle definition? I was wondering if Meton found his relation 'between 19 tropical years and 235 synodic month' (and this leads to a relation with 254 sidereal months) or 'between 235 synodic months and 254 sidereal months' (and this leads to a relation with 19 tropical years). <http://geniet.mypage.org/moonfluct.htm>  
Thanks for your input. All the best, Victor

From: Thomas Schmidt

<schmidt@HOKI.IBP.FHG.DE>

There does not seem to be much of an 'original text'. The following is a quote from Hugh Thurston: "Early Astronomy", Springer 1994, p. 111, to give some context of what is known about Meton:

"Just after 450 B.C. the Greeks began to write astronomical and meteorological diaries called paraepgmata (and continued to write them for at least three hundred years) [81]. The early paraepgmata mention two astronomers by name, Meton and Euctemon. We have only tantalizing fragments about these two pioneers. They made observations in Thrace, Macedonia, the Cyclades islands, and Athens; and their pupils deter-

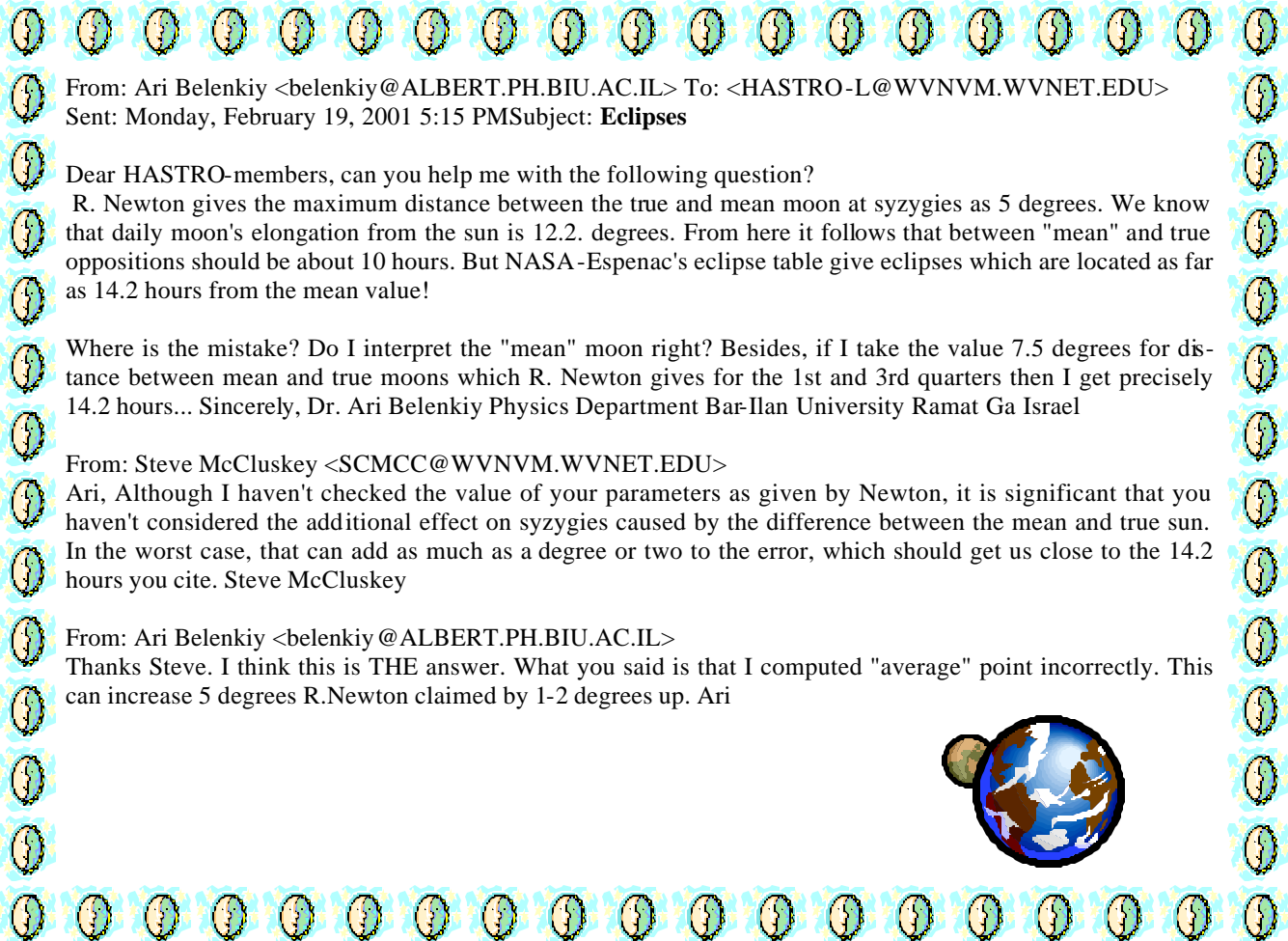
mined the date of the summer solstice in 432 B.C. [82]. They used the signs of the zodiac to describe positions on the ecliptic. Meton suggested that a period of 19 years, which contains almost exactly a whole number (235) of months, could be used to correlate the solar and lunar calendars [83]."

[81] Paraepgmata: details in Pauly's Real-Encyclopaedie der Classischen Altertumswissenschaften.

[82] Meton and Euctemon's observations: Ptolemy, Phaseis, 67.2.

[83] 19-year period: Geminus, Isagoge, Chapter VIII.

Maybe the last reference could give you some details on what exactly Meton found.



From: Ari Belenkiy <belenkiy@ALBERT.PH.BIU.AC.IL> To: <HASTRO-L@WVNVM.WVNET.EDU> Sent: Monday, February 19, 2001 5:15 PM Subject: **Eclipses**

Dear HASTRO-members, can you help me with the following question?

R. Newton gives the maximum distance between the true and mean moon at syzygies as 5 degrees. We know that daily moon's elongation from the sun is 12.2. degrees. From here it follows that between "mean" and true oppositions should be about 10 hours. But NASA-Espenac's eclipse table give eclipses which are located as far as 14.2 hours from the mean value!

Where is the mistake? Do I interpret the "mean" moon right? Besides, if I take the value 7.5 degrees for distance between mean and true moons which R. Newton gives for the 1st and 3rd quarters then I get precisely 14.2 hours... Sincerely, Dr. Ari Belenkiy Physics Department Bar-Ilan University Ramat Ga Israel

From: Steve McCluskey <SCMCC@WVNVM.WVNET.EDU>

Ari, Although I haven't checked the value of your parameters as given by Newton, it is significant that you haven't considered the additional effect on syzygies caused by the difference between the mean and true sun. In the worst case, that can add as much as a degree or two to the error, which should get us close to the 14.2 hours you cite. Steve McCluskey

From: Ari Belenkiy <belenkiy@ALBERT.PH.BIU.AC.IL>

Thanks Steve. I think this is THE answer. What you said is that I computed "average" point incorrectly. This can increase 5 degrees R.Newton claimed by 1-2 degrees up. Ari



## General Topics

From: Andre Vogt <eclipse@justmail.de> To: <solareclipses@aula.com> Sent: Thursday, February 08, 2001 7:44 PM Subject: [SE]

### Magnitude of the corona

Dear list members, Does anybody know the brightness (magnitude) of the corona of the totally eclipsed sun?

I have seen the total eclipse of August 11, 1999 with an overcast sky. I think that the environment was brighter than in a night with a full moon.

The full moon's magnitude is approximately -12.9 mag. It would be interesting to know the magnitude of the corona at the minimum and maximum of the cycle of solar activity. Thanks for an answer. Best regards. Andre (from Germany)

From: <Kidinvs@aol.com>

Its funny... not being a scientist, I have no idea as to the magnitude of the corona. But the lack of total darkness seems to be due to a couple of things, I think most importantly, the "360 degree sunrise" that seems to be the brightest source of ambient light. The brightness of the corona seems to be no brighter than Venus, or Jupiter seems. I think the corona "seems" brighter than it really is, because of the "blackness" of the dark side of the moon in the corona's center. I have always been mystified by how "black" the moon is during totality.... it seem to be the purest black I have ever seen. Eric Brown

From: Evan Zucker

I share your sentiment. Yet there have been several photographs, such as a recent one by Fred Espenak, showing details on the moon during totality, and so the moon apparently is not quite as black as it appears visually. I'm not sure if anybody has reported seeing details on the moon visually (rather than photographically), but I believe I have seen one or two such reports. Evan H. Zucker

From: Dietmar Staps <dietmar.staps@wiesbaden.netsurf.de>

Hello Andre, The Book of Shklovskii, Physics of the Solar Corona, Oxford 1965 page 3 gives values for 10 eclipse in terms of full moon brightness values are between 0.17 and 0.77 of full moon brightness higher values at solar maximum. greetings dietmar

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

I concur, it seems quite black, although I have never tried

to measure how black it really is. But if you want to see something really black, try this:

1. Get a coffee cup. As long as the cup is opaque, nothing else matters, but this demonstration is most convincing if you use a white cup.
2. Get a black piece of paper large enough to cover the opening of the cup. Use the blackest paper you can find. It should be flat black, not shiny black.
3. Cut a small hole in the center of the paper. Size is not very important, but make it 3 or 4 mm in diameter. I does not have to be perfectly round.
4. Put the paper over the top of the coffee cup, so that the hole is about in the middle of the opening in the cup.
5. Now look at the HOLE. Isn't the hole even blacker than the paper?

What you have made is a cavity radiator. Since light that enters the hole has only a very, very small probability of being reflected back through the hole, this cavity captures essentially all the light that falls on the hole, reflecting none. But that's the definition of a blackbody: Something that absorbs all the light that falls on it and reflects none. (It can emit light of its own, but it absorbs all the light that falls on it.) Your blackbody is at room temperature, so the hole emits only IR light, which you can't see, so the hole looks black.

The surface of the moon reflects light pretty well, so it is not a blackbody. The only reason it looks black during an eclipse is because no light falls on it - well, not much. There is some light reflected onto the moon by the earth. I don't know how much, but it cannot be much during totality. Has anyone seen earthshine on the moon during a TSE? Jim Huddle

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

Many people have commented that the human eye captures the dynamic range of corona brightness better than any camera. Why then does our eye see only black for the moon while 1 second+ camera exposures capture earthshine?

From: Evan Zucker

Because the photograph is not going for dynamic range -- it's going just for overexposure to bring out details on the moon. I'm not sure if 1 second is long enough; it could require longer. EVAN

From: Marc Weihrauch <marc.weihrauch@student.uni-halle.de>

*(Continued on page 22)*

## General Topics

Dear Jim, There is quite a famous report about the TSE of July 8, 1842 by the Austrian poet Adalbert Stifter. He observed the eclipse from Wien (Vienna). In his description of totality there's the sentence:

"...the moon stood in the middle of the sun, but no longer as a black disc, but as it were half transparent like run over by a light shimmer of steel..."

("...der Mond stand mitten in der Sonne, aber nicht mehr als schwarze Scheibe, sondern gleichsam halb transparent wie mit einem leichten Stahlschimmer überlaufen...")

That sounds to me as if he had noticed earthshine, but on the other handside he described the corona as "reddish, bluish" - I can't tell how realistic that is. Unfortunately, I've only seen one TSE up to now (TSE99), and didn't see the black sun because of the clouds.

Anyway, Stifter's report is VERY impressive. If you can get a translation of it or even speak German, I can only recommend reading it. Best regards, Marc

From: Gerard M Foley

Although I have enjoyed good views of four total solar eclipses, I have not paid much attention to this.

If one is viewing through a very clear sky and the moon and sun are crossing the meridian, the dark side of the moon would be subject to earthshine from nearly the whole hemisphere of the earth. The solar illumination of the earth would in general exceed that which gives rise to earthshine on the dark part of a first or third quarter moon. The latter is very commonly visible. I have an impression that earthshine is brightest when the moon is high in the winter sky, when the parts of land which are not cloud covered might have snow to increase the reflectivity.

I think the impression of deep blackness of the moon during total eclipse is probably due to contrast.

I was in the central Gaspé during the total eclipse of 1972, with the sky so heavily overcast that the partial phases of the eclipse could not be spotted. My impression was that it didn't get very dark at totality, not nearly as dark as in a clear sky total eclipse.

I think the darkness at totality of eclipses in clear skies must be much related to the width of the track of totality. Eclipses of long duration, I think, should give rise to less illumination at the center of the track than would short ones.

I have never done any photometry during an eclipse. This

would be the real test. Photographs of the horizon during totality may also show variations in the saturation and height of the sunset colors, but the amount of cloud near the horizon would obviously affect this greatly. Gerry K8EF

From: Dale Ireland <direland@drdale.com>

Hello, Considering that the "dark" side of the Moon during an eclipse is illuminated by a 2 degree wide "full Earth" it must be pretty bright and the blackness just an illusion due to the fact that the corona is really quite bright itself. If the magnitude of the full moon is -12 and the Earth is @ 4 times larger diameter and has a greater albedo you can imagine how well the Moon's surface must be illuminated. Anyone figure a value for the brightness of the full earth as seen from the Moon?

From: Patrick Poitevin <patrick\_poitevin@hotmail.com>

I have observed twice the surface of the eclipsed Moon during totality. Of course I used the C90 for my observations. Most of the observers forget to watch the details (such as the surface of the Moon). Of course, the details are not that obvious as normal Moon watching, but the general aspects can be seen on the Moon. Just try. Best regards, Patrick

From: Evan Zucker <ez@MrTotality.com>

>Considering that the "dark" side of the Moon during an eclipse is

I agree, but the acid test would be whether anybody can see any details on a normal New Moon. I've never seen one, but I'm guessing you could if you knew exactly where to look. Has anybody ever heard any reports of people observing the New Moon? It should be relatively easy with a CAT telescope.

>If the magnitude of the full moon is -12 and the Earth is @ 4 times larger

I've seen the calcs, although I don't recall what they were. I can tell you that it is VERY bright, which was confirmed by the Apollo astronauts. It's not so much the larger diameter but the MUCH larger area -- about 16 times larger, using the classic "Pie Are Squared." EVAN

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

Anyone who wants can find where to look. The question is how to keep the flare from the sun from ruining the view. I would assume that a heliograph with a wide enough angle

*(Continued on page 23)*

## General Topics

could be used to view the new moon? Rather than a CAT I would think the simplest thing you could get would be appropriate. Gerry K8EF

From: Evan Zucker <ez@MrTotality.com>

>Anyone who wants can find where to look. The question is how to keep the flare from the sun from ruining the view. I would assume that a heliograph with a wide enough angle could be used to view the new moon?

Sometimes, like the New Moon, I'm not very bright.

You're right, of course -- I had forgotten that the New Moon would only be above the horizon in daylight (or very shortly after sunset). That would very likely make it impossible to view with the naked eye and possibly with a telescope too. Just think how much brighter the daytime and civil twilight sky are than the solar corona, and the corona makes it very difficult to see details on the moon during totality. Thanks for setting me straight.

From: Andre Vogt <eclipse@justmail.de>

Full moon seen from earth: -12.9 mag  
Full earth seen from the moon: -16.6 mag  
Sun seen from earth (not eclipsed): -26.7 mag

The earth seen from the moon has the same brightness as the full moon seen from earth about 40 hours after "new earth". Best regards. Andre

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

> Shklovskii, Physics of the Solar Corona, Oxford 1965 [...] gives values for 10 eclipse in terms of full moon brightness values are between 0.17 and 0.77 of full moon

How believable was his measuring technique? According to my own photographic experience from 1983 to 1999 I would say that the brightness is always significantly bigger than the full moon's: Even with an exposure of 1/1000 sec at f/10 there is still some inner corona visible on 100 ISO film, and when the exposure time approaches 1 second, the inner regions are always burned out on slide film (though not on negative film with its higher dynamic range) - this \*never\* happens with the full moon.

The inner corona and parts of the densest streamers are so bright that they can even be photographed during annular eclipses like the one in Australia in 1999 (see <http://www.astro.uni-bonn.de/~dfischer/aus99/first.html> for not even the best pictures I've seen - F. Dorst actually captured a streamer or two with still longer exposures from the same site).

Add to that the glaringly bright chromosphere (which is covered most of the time during totality, though) and you will have a hard time believing that there was ever a total solar eclipse where it got dark like at night. The brightness of the corona overall varies by a factor of 2, if I remember correctly from an eclipse conference in Bolivia in 1995 (talk by V. Rushin) - I can look up my notes. And I bet the answer is in J. Pasachoff's book on the solar corona anyway. Daniel

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

In 1970 I used Kodachrome 64. I was fairly pleased with my result, but for 1973 I assumed the greater dynamic range Daniel attributes to negative film, and used it. I don't know why, but I was quite disappointed. Gerry K8EF

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

Of course, the greater dynamic range also means that negatives of the corona always look rather unimpressive and low in contrast, and commercial labs have a hard time making good prints from them. (Although I often got good prints right on eclipse day or shortly thereafter, while still in the eclipsed country - in Mexico, Peru and Curacao - and never saw prints that good again when back home :-).

Only when you try some darkroom tricks like dodging or computer-process the eclipse images, the negative wins handsdown, because almost everything can be in one single (well exposed) image, from the chromosphere and prominences all the way to the coronal streamers at several solar radii. For the last 10 years or so, I have thus always (when the eclipse was long enough) tried to get the 2nd and 3rd contact on slide film for the fun of it the corona at mid-eclipse on negative, for some real analysis. Daniel

From: christian viladrich <viladric@club-internet.fr>

Details on the moon can be seen in just 1s exposure with a 55 mm diameter 440 mm fl refractor and 100 ISO negative film, see my images of 1998 eclipse at : <http://perso.club-internet.fr/viladric/astro/eclsol/process.htm>

Stephen J O'Meara reported seeing the earthshine during 1999 eclipse (see ST Nov 1999).

It could be interesting to know that one of the first (may be the first?) observation and measure of the brightness of the earthshine during a total eclipse was done some 30 years ago (1970 eclipse - Serge Koutchmy - Astrophysic Institute of Paris/France). The surface brightness of the brightest part of the earthshine was found to be in the order of 1.E-10 the

*(Continued on page 24)*

## General Topics

surface brightness of the sun. Regards, Christian Viladrich  
From: Mick Wolf

In recent days there were a few questions regarding the brightness of the solar corona and the Moon during TSE. I will provide the answers in simple photometric terms. The brightness of the Sun is 165000stilb (cd/cmsq.) which gives the illumination E at the Earth' surface as... $E(\text{Sun}) = B(\text{Sun}) \times \text{solid angle of Sun}$ , equal to  $165000 \times 10 \times 10^{-4} \text{ Lux} \times 6.85 \times 10^{-5} = 113000 \text{ Lux}(\text{cd/msq.})$  Similarly, the illumination at the surface of the Moon during TSE... $E(\text{Moon}) = B(\text{Earth}) \times \text{solid angle of Earth} \times \text{albedo}$ .  $E(\text{Moon}) = 113000 \text{ Lux} \times 3.5 \times 10^{-4} \times .35 = 14 \text{ Lux}$ . And since the albedo of the Moon is .07 only about 1Lux is reflected back. Comparing this with the brightness of the total corona of  $3.3 \times 10 \times 10^{-4} \text{ Lux}$ , the Moon brightness during TSE is more than 4 orders dimmer and would be extremely difficult to see with unaided eye.

The illumination at the Earth's surface produced by the total corona is equal to Sun's brightness / 500000. This value I obtained during the TSE in 1976 in Robe, South Australia. It must be pointed out that the brightness of the corona reduces with the distance from the Sun and at 1 or 2 radii the brightness may be a few orders lower,. Atmospheric and climatic conditions were not considered in my calculations as they have only a small influence on the results I hope this will throw some light on the "black Moon" and the "correct" exposure for the corona. Mick.

From: Dale Ireland

Do you have a similar calculation for the illumination of the Earth's surface by the Full Moon?

From: Mick Wolf

Hello Dale here is the answer. The Sun'S illumination on the Moon's surface will be slightly less than on the Earth.  $((150000000 / (150000000 + 350000))E = .995$ , which is .05 % and therefor negligible. The illumination on the Earth by full the Moon is  $E(\text{EM}) = E(\text{Moon}) \times \text{the solid angle (of E from M)} \times \text{albedo (Moon)} = E(\text{EM}) = 113000 \text{ Lux} \times .35 \times 10^{-4} \times .07 = 2770 \text{ Lux}(\text{cd/msq.})$ . If you want to take account of the atmospheric transmission (.8) this will reduce this figure by (.8\*.8 or 64%). This moonshine on the earth as vied by an astronaut on the Moon is equal to about 1770Lux. As a curiosity - an astronaut's exposure for 100 ISO film will be F11 at 1/150sec. I hope this will answer your question, but do not hessitate to ask if you have any further queries. With regards Mick.

From: Vic & Jen Winter, ICSTARS Inc. <icstars@icstars.com> To: <SOLARECLIPSES@AULA.COM> Sent: Friday, February 09, 2001 8:54 PM Subject: [SE]

### Negative vs. slide film

> >In 1970 I used Kodachrome 64. I was fairly pleased with my result, but for 1973 I assumed the greater dynamic >range Daniel attributes to negative film, and used it. I don't know why, but I was quite disappointed.

I would suspect that if you used negative film in 1973, that your disappointment in the negative film was related to the grain quality of available films at the time. This had always been the slide vs negative arguement... and justifiably so until recent advancements in negative grain technology. Many people remember the super-fine grain negative films that emerged in the late 80's like T-Max and the private labels claiming to use movie film emulsions. Since that time, grain in film has become much more of a NON-issue.

This, therefore puts both materials into a comparison by other qualities.

Slide film is less 'forgiving' which means that 1) If you under or over-expose the film by one or two 'stops', your the details of your image are gone and 2) the dynamic range from 0 to 100% is smaller. the contrast may visually appear sharper because there are less fractions of gradations in the tone curve. It STILL offers a sharper image due to its grain quality and there is less room for error in subjective print settings from a photolab.

Negative film has a much wider dynamic range and tone curve. If you over-expose the film, it's possible to compensate in the print exposure or computer scan to correct for errors and gather more detail in low-contrast features. The mid-range film speeds are more than adequit in grain resolutions these days, while slide film is technically higher. It isn't possible to guarantee that fotomat will make proper prints from negative film, but anybody who is taking their film to a discount photo lab doesn't have the right to complain about this issue. More can be done with a quality film house than by any change in medium.

\*\* but the one reason we feel negative film can't be beat for shooting corona is this: \*\* The new photoshop procedure for image compilation calls for of varying exposures of the corona. One single exposure scanned at different input levels is capable of 'pulling-out' more than one exposure of the corona. I found this feature extremely helpful in achieving more subtle detail in our compilations from 1999.

I have never personally used slide film to image the diamond ring, but concur that it might capture the high-contrast 'sparkle' of the moment more aptly. Many of my favorite images of bailey's beads and DR are shot with slide film. Jen Winter



## General Topics

From: Evan Zucker <ez@MrTotality.com> To: <SOLARECLIPSES@AULA.COM> Sent: Saturday, February 10, 2001 7:33 AM Subject: [SE]

### Personal satellite

I just heard about is a company that will launch your own personal 1,000 square centimeter cube satellite for \$45,000.

<http://www.osss.com/products/cubesatindex.html>

I realize this isn't completely on-point with respect to eclipses, but I can think of eclipse-related experiments that some folks might want to do with their own personal satellite. Here's an excerpt from the web site:

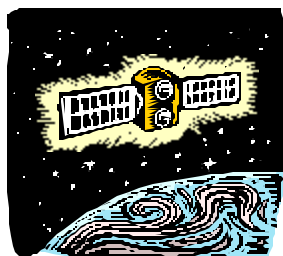
What Can A CubeSat Do? Because OSSS is the world's premier small satellite integrator and mission coordinator, even a single CubeSat has seemingly endless capabilities. Here is a short list of applications assembled by OSSS engineers to jumpstart your imagination:

#### Scientific

- . Microgravity Research
- . Biomedical Research
- . Component testing for satellite-based technologies
- . Test (space-rate) your own space-bound technology in orbit

#### Non-Scientific

- . Place a loved one's ashes in orbit
- . Put your name in space
- . Take your own pictures of Earth from orbit
- . Take pictures of the moon, sun, or stars



If it's access to space that you want, OSSS can deliver, and for less than the cost of a sport utility vehicle. Evan H. Zucker San Diego, California

From: Dale Ireland <direland@drdale.com>

That is 1000 cubic centimeters, not square. It is \$45,000 for an empty box that is 4 inches on a side. They supply "power package" a "computer package" and a "communications package" at much additional cost. I can't tell from the webpage but I am wondering if those "packages" are just more cubesats hooked together, each one \$45,000. How much could you get into a one quart milk carton? Dale

From: Brian Garrett <mgy1912@home.com>

And furthermore (to get back on topic), you'd have to be orbiting right next to the thing in order for it to produce anything like a halfway decent eclipse...OTOH, the antumbra should extend out a long way, so your sat could provide square-shaped annular eclipses for someone in low earth orbit. For 45 grand, who could ask for more! :-) Brian

From: Evan Zucker <ez@MrTotality.com>

That is exactly right -- 10 centimeters long on each side of the cube -- and it's what I had intended to say. Thanks for the correction.

Actually, I had wanted to say something like 10 centimeters cubed (just as 10 centimeters square equals 100 square inches), but I wasn't sure if that was correct terminology. -- EVAN

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

Oh Dear! 10 centimetres is a little under 4 inches, so 10 centimetres square is a bit less than 4 inches square which is only 16 square inches. Not 100 square inches. Woops.

Have I missed out on the new mathematics somewhere? Cliff Turk

From: Evan Zucker <ez@MrTotality.com>

I think you may be making the same mistake that my original message contained -- it's 10 centimeters (or about 4 inches) cubed, not squared. So that would be about 64 cubic inches (4x4x4) or 1000 cubic centimeters (10x10x10). - EVAN

From: FRED ESPENAK <u32fe@lepvax.gsfc.nasa.gov> To: <SOLARECLIPSES@AULA.COM>; <eclipse@hydra.carleton.ca> Sent: Tuesday, February 13, 2001 6:37 PM Subject: [SE]

### Special SENL issue about Christmas Eclipse NOW ONLINE!

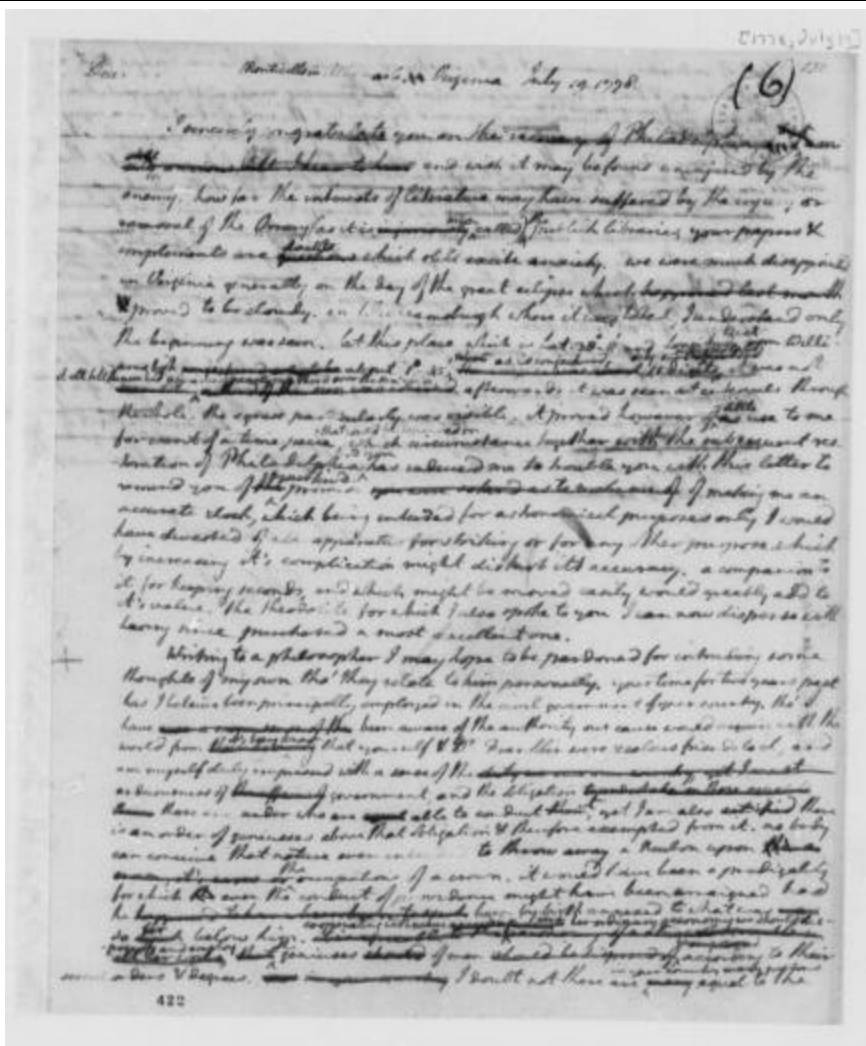
Patrick and Joanne are have prepared a special issue of the SENL (Solar Eclipse Newsletter) which covers the 2000 Dec 25 Christmas Eclipse. There was so much material to cover that they had to break it up into three separate parts:

- January 2001 Special A (1.2 Mb pdf file\*)
- January 2001 Special B (0.9 Mb pdf file\*)
- January 2001 Special C (1.1 Mb pdf file\*)

This SENL special issue is now online in pdf format on the SENL index page of MrEclipse.com: <http://www.mreclipse.com/>

*(Continued on page 27)*

## General Topics—SOLAR ECLIPSE 1778



From: J.P. van de Giessen To: SolarEclipses Sent: Wednesday, February 21, 2001 7:42 PM Subject: [SE] Solar Eclipse 1778

Hi all, I found in the papers from Thomas Jefferson some interesting letters about the Total Eclipse of June 24, 1778 you can find (and read) them on the web. From Thomas Jefferson to David Rittenhouse, (July 19, 1778)

<http://memory.loc.gov/mss/mtj/mtj1/001/0900/0953.jpg>

<http://memory.loc.gov/mss/mtj/mtj1/001/0900/0954.jpg>

A letter from reverend James Madison to Thomas Jefferson, (July 26, 1778):

<http://memory.loc.gov/mss/mtj/mtj1/001/0900/0957.jpg>

<http://memory.loc.gov/mss/mtj/mtj1/001/0900/0958.jpg>

A reaction from John Page to Jefferson (August 19, 1778):

<http://memory.loc.gov/mss/mtj/mtj1/001/0900/0961.jpg>

<http://memory.loc.gov/mss/mtj/mtj1/001/0900/0962.jpg>

<http://memory.loc.gov/mss/mtj/mtj1/001/0900/0963.jpg>

<http://memory.loc.gov/mss/mtj/mtj1/001/0900/0964.jpg>

<http://memory.loc.gov/mss/mtj/mtj1/001/0900/0965.jpg>

<http://memory.loc.gov/mss/mtj/mtj1/001/0900/0966.jpg>

Jan Pieter van de Giessen

## General Topics

From: Marc Weihrauch <marc.weihrauch@student.uni-halle.de> To: Finsternisliste <solareclipses@aula.com>  
Sent: Tuesday, February 20, 2001 9:37 PM Subject: [SE]  
**Solar filters**

Dear shadow chasers, I'd like to ask you about a certain material that might be used as a solar filter.

If I only knew its English name! I'm talking about these thin metallized plastic blankets which are used to keep injured persons after accidents warm. They look silver on one side, golden on the other. Do you know what I mean?

Now, some people claim that several layers of these would serve as a safe solar filter for visual observation, without optical devices. After all, these blankets are designed to reflect IR.

Can you tell whether these things are safe? We are considering to take a few of these blankets along for the natives next summer, since they are easier to transport than 100 or more solar filter glasses. Could we do that without having a guilty conscience? Thank you for your help! Marc

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

No, that is not a safe material according to the experts. See the reference to "space blankets" on: <http://sunearth.gsfc.nasa.gov/eclipse/SEhelp/safety2.html>

As an alternative, I would look at the relatively inexpensive but safe Baader Astro-Solar Safety Film recently reviewed in Sky and Telescope magazine: <http://www.skypub.com/resources/testreports/accessories/0009baader.html>

Street price is \$70 USD for 0.5 x 1.0 meter sheet. Good luck and clear skies! Eric

From: Patrick Poitevin <patrick\_poitevin@hotmail.com>  
To: SE Mailing List <SOLARECLIPSES@AULA.COM>  
Sent: Tuesday, February 13, 2001 8:49 PM Subject: [SE]  
**Solarmax (again) on IMAX**

Dear All, Without (hopefully) starting the same discussion as a short while ago, please find herewith a message out of SPA Section Newsletter, Vol. VIII, issue 20:

4. SolarMax -- Coming February 16, 2001 to the National Air and Space Museum Langley IMAX Theater

From: "Thomas E. Moore" <Thomas.E.Moore@gsfc.nasa.gov>

SolarMax is a 40-minute giant-screen documentary that tells the story of humankind's struggle to understand the sun-earth connection. SolarMax takes the audience on an incredible voyage from pre-history to the leading edge of today's contemporary solar-terrestrial science. Using data from NASA and ESA's Solar and Heliospheric Observatory (SOHO) mission, SolarMax brings our sun to the screen like never before. All of the images of the sun and aurora used in this movie are real, not computer generated.

<http://www.nasm.edu/nasm/IMAX/IMAXfilms.html>

From: Yvonne Jacobs <ylj70@yahoo.co.uk>

Hopefully I'm not taking up too much bandwidth here, but based on the recommendations on this e-mail loop, I went to see this film in London, and really enjoyed it. So much so, that I've been trying to find a copy on video. Imax usually sell their films on video but apparently not this one. I also e-mailed the distributor in Chicago, but have not heard back. Does anyone know where to get a copy of this film? I'd also be really interested in any other recommendations for videos of both eclipses and aurora. Thanks....Yvonne Jacobs

*(Continued from page 25)*

SENL/SENLinde.htm

Other recent issues currently online at the above page include:

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 (1.1 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 Patrick and Joanne! - Fred Espenak

## General Topics

From: F.Podmore <podmore@science.uz.ac.zw> To: <solareclipses@aula.com> Sent: Monday, February 19, 2001 1:28 PM Subject: [SE]

### "The first photographic eclipse?"

The latest issue of ASTRONOMY & GEOPHYSICS, the news magazine/journal of the Royal Astronomical Society, to arrive here (February 2001) has a 5 page article by Peter D Hingley called 'The first photographic eclipse?' (volume 42 number 1 pages 18 - 22) about the British expedition aboard HMS Himalaya to observe and photograph the 1860 eclipse which crossed Spain.

Perhaps someone could scan the article to a website for others to read. Unfortunately I don't have a scanner.

The author is the librarian of the RAS and can be contacted at pdh@ras.org.uk. He may be able to supply reprints or photocopies to those interested. Francis Podmore.

From: <Jay.M.Pasachoff@williams.edu>

Astronomy and Geophysics is a copyrighted journal, and so can't be legally scanned to a Website for others to read. Everyone is invited to take out a subscription to A&G, or to get your library to get one. It is part of membership in the Royal Astronomical Society--and the RAS would have fewer members if its publications were freely available. Jay Pasachoff

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

Original (!) prints of excellent photographs from exactly this eclipse expedition can be seen at the Stuttgart (Germany) exhibition I mentioned here last week - the review is now also at <http://www.astro.uni-bonn.de/~dfischer/mirror/219.html> (last story).

I've just looked up the A&G article, which reproduces just one of De La Rue's eclipse photographs: The original prints are *\*vastly\** better. Now I wouldn't say that this is reason enough to come all the way from Zimbabwe to have a look, but when you're in the area ... Daniel

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

Following Jay Pasachoff's message, for which I thank him, I withdraw any suggestion of scanning and 'distributing' copyrighted material. I was not aware of the implications of my suggestion, and did not realise I was suggesting doing anything illegal. My sin-

cere apologies to RAS, the author and the Editor. Francis Podmore

From: Alejandra León <leonale@racsa.co.cr>

For people in far away places (like some of us) where we do not have access to these kinds of publications, it is very difficult to keep up with the latest information. Internet has widened the spectrum of possibilities. I am hopeful that in an effort to benefit the international community more authors and publications will go on line, at least with abstracts.

Meanwhile what? Can anyone from this list help make a contact, ask for permission and send the article around? Many authors and magazines do answer positively to these requests. Alejandra León Castellá Fundación CIENTEC San José, Costa Rica

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

"Alejandra [iso-8859-1] Len" <leonale@racsa.co.cr> from Costa Rica asked how to get copies of articles from magazines.... First of all, please accept my apology for mangling your name; my 7-year old computer doesn't support anything but US-ASCII.

Your local library may be able to get a copy of an article for you. Many libraries, particularly college and university libraries, but also some community libraries, can provide this service, sometimes even for free, but you have to ask them. Here in the USA, the service is often called "document delivery" and it works this way: You go to the reference desk at your library and fill out a form describing which article you want and which journal it is in. Then someone at your library finds another library that carries that journal, and asks them to send a copy by regular mail or by fax. When your library gets it, they call or e-mail you, and you go over and pick it up. At my library, this process takes a week or two, and it is free. It is easiest for both libraries involved if you know the title, volume number and date of the journal or magazine, the name of the author(s), the title of the article, and the first and last page numbers.

If you have no document delivery or interlibrary loan at your library, I've requested my library to get me a copy of the article in question:

Buzz me in about two weeks (or else I will forget) and I'll fax you a copy, but please understand that since it will be a fax of a fax, the pictures won't be very pretty. Best of Luck, Jim Huddle

*(Continued on page 29)*

## General Topics

From: Alejandra León <leonale@racsa.co.cr>

Dear Mr. Prof J R Huddle: Thank you very much for reply and your explanation about the service through a library. I also understand the limitations of different systems regarding accents in other languages, even newer versions have problems.

I will try to get a copy of the article and if I fail I will get back in touch with you in 2 weeks. thank you again, Alejandra León Castellá

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

In the case of Astronomy & Geophysics this is already the case: At <http://www.blackwell-synergy.com/Journals/member/institutions/issuelist.asp?journal=aag> everyone can access the abstracts (which is very short for the paper in question, though) - and if you log in from a university account that has a subscription, you can also access the full articles. The machine I'm writing from does have one; try <http://www.blackwell-synergy.com/Journals/member/institutions/processpaid.asp?contentid=aag.2001.1&filetype=articles&article=89977> and see if you can get the full paper or not. It's fun to read, but I may already have found a problem with it: The prints of the de la Rue pictures shown in Stuttgart must have been made from more than two different plates obtained during totality (judging from the appearance of the chromosphere) while both the A&G paper and the exhibition catalog say that de la Rue took just two totality images. The original 1860 plates seem to be lost or at least inaccessible, unfortunately.

Daniel

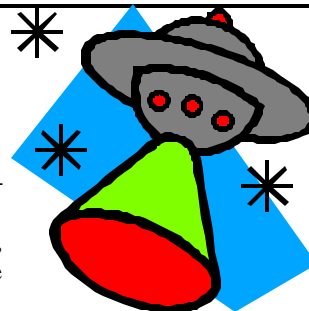
From: Brian Garrett <mgy1912@home.com> To: <SOLARECLIPSES@AULA.COM> Sent: Thursday, February 15, 2001 8:19 AM Subject: [SE]

### UFO reports during 1991 eclipse?

Greetings umbraphiles, So I come home from work, feeling in an "X-Files" sort of mood, and I turn on the television to the Sci-Fi channel, where they're showing yet another "documentary" on UFOs. Nothing remarkable shows up for the first n minutes, and then suddenly they're showing crowds of people in Mexico during the 1991 TSE, videotaping not only the eclipse, but a bright object which is claimed to be a UFO. The object they're showing appears (in the craftily-edited video) to be at least as bright as Jupiter and possibly even as bright as Venus, and from what was visible in the background it appeared that the object was visible below and to the right of the eclipsed Sun, at a distance of about 30 degrees. The object was, according to the narration, observed at various locations (thus ruling out an air/space craft, but the narrators don't tell you that, of course) throughout the zone of totality, and *\*only\** during or just before totality.

Was Venus and/or Jupiter visible during the 1991 eclipse, and if so were either of them at that kind of angular distance from the Sun? Also, did anybody hear any reports at the time that a UFO was supposedly seen, or hear anyone nearby remarking on anything unusual (besides the eclipse and stars visible in the daytime sky, I mean :-)) during totality?

In one of the video clips, they show the object appear to be moving and leaving something like a trail of heated air behind it, thus suggesting an airplane at relatively low altitude. But the object was supposedly observed at widely separated locations, so while there *\*could\** have been a plane (especially one heading out for the specific purpose of eclipse chasing), I'm thinking that the object in question was a planet. Brian Garrett



*(Continued on page 30)*

## General Topics

From: Andre Vogt <eclipse@justmail.de>

Hello, During the total solar eclipse on July 11th, 1991 Jupiter was positioned about 27 degrees east-south-east and Venus about 41 degrees in the same direction regarding to the sun. At the point of maximum eclipse (22° 0' N, 105° 12'W in Mexico) the sun was in the zenith, so both planets were visible. Andre

From: Don Estes <donestes@donestes.com>

Seems likely to me. I'd have to go get my photos and check, but I think there was a near conjunction of 4 planets. I could see Jupiter and Venus during fading twilight after sunset from the plane coming home, and actually got a photo of them through the airplane window. 30 degrees sounds about right to me. Anyone with a better memory?

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

Sir, From my observations notebook, written during the 1991 July 11 TSE on the campus of the University of La Paz, Baja California, and refined immediately after third contact:

De kleur van de hemel is staalgrij, maar in het westen met een zweem lichtgroen als van een fluorescerende viltstift. Het lijkt totaal niet op nachtelijk duister, ook niet op een nacht met volle maan. Hoogstens lijkt het op de schemering van een onbewolkte avond een kwartier na zonsondergang. Slechts enkele sterren' vertonen zich. Het zijn de planeten Venus en Jupiter. De ster Regulus moet daar vlakbij staan. Ik zie hem niet.

Translation: "The color of the sky is steelgray, but in the west with a trace of light green like from a fluorescing marker pencil. It has neither similarity at all to nightly darkness nor to a full moonlit night. At most it looks like the dusk of a cloudless evening a quarter after sunset. Only a few 'stars' appear. They are the planets Venus and Jupiter. The star Regulus must stand close by. I do not see him."

I vividly remember those fleeting 6.5 minutes. A very bright corona, asymmetric, long streamers like a bird, but with its wings and body upside down, with a list of respectively 50 and 40 degrees to the left. The sky not dark, but steel gray, and nothing visible of Mercury nor of Mars! They ought to stand near Jupiter and Venus, respectively. Absolutely no other object in the sky, neither defined nor undefined. But well a stunning prominence on the western edge of the sun, like a brilliant magenta diamond. Later from pictures described as the 'sea horse' prominence.

Wil Carton, Castricum, Netherlands.

From: Allison Nies <calvideo@4LINK.NET> To: <HASTRO-L@WVNVM.WVNET.EDU> Sent: Monday, February 19, 2001 2:07 PM Subject: Re:

### Woman Astronomer

Does anyone on the list have any info about a French woman astronomer by the name of Madame du Pierry?

I came across her name while researching Emily du Chatelet. Apparently, she was the first women professor of Astronomy in Paris sometime in the first half of the 18th century.

My email adress is: calvideo@4link.net Thanks, Allison Nies

From: R.H. van Gent <r.h.vangent@PHYS.UU.NL>

Dear Allison Nies, According to Jérôme de la Lande (\_Bibliographie Astronomique; avec l'Histoire de l'Astronomie depuis 1781 jusqu'à 1802\_, pp. 585, 600, 687 & 704), Madame du Pierry was one of the most learned women he knew and his \_l'Astronomie des Dames\_ (1786, 1795) was dedicated to her.

She was born as Marie-Louise-Élisabeth-Félicité Pourat de la Madeleine on August 1, 1746, in la Ferté-Bernard dans le Maine.

In 1782 she published \_Tables de la durée du jour et de la nuit\_ and from 1789 onwards she gave public lectures on astronomy for Parisian ladies. She also performed many calculations on solar eclipses for Alexandre-Guy Pingré.

As la Lande does not mention her death, she probably died after 1802.

From: <KCStarguy@aol.com> To: <eclipse@hydra.carleton.ca> Sent: Sunday, February 25, 2001 7:07 PM Subject: [eclipse]

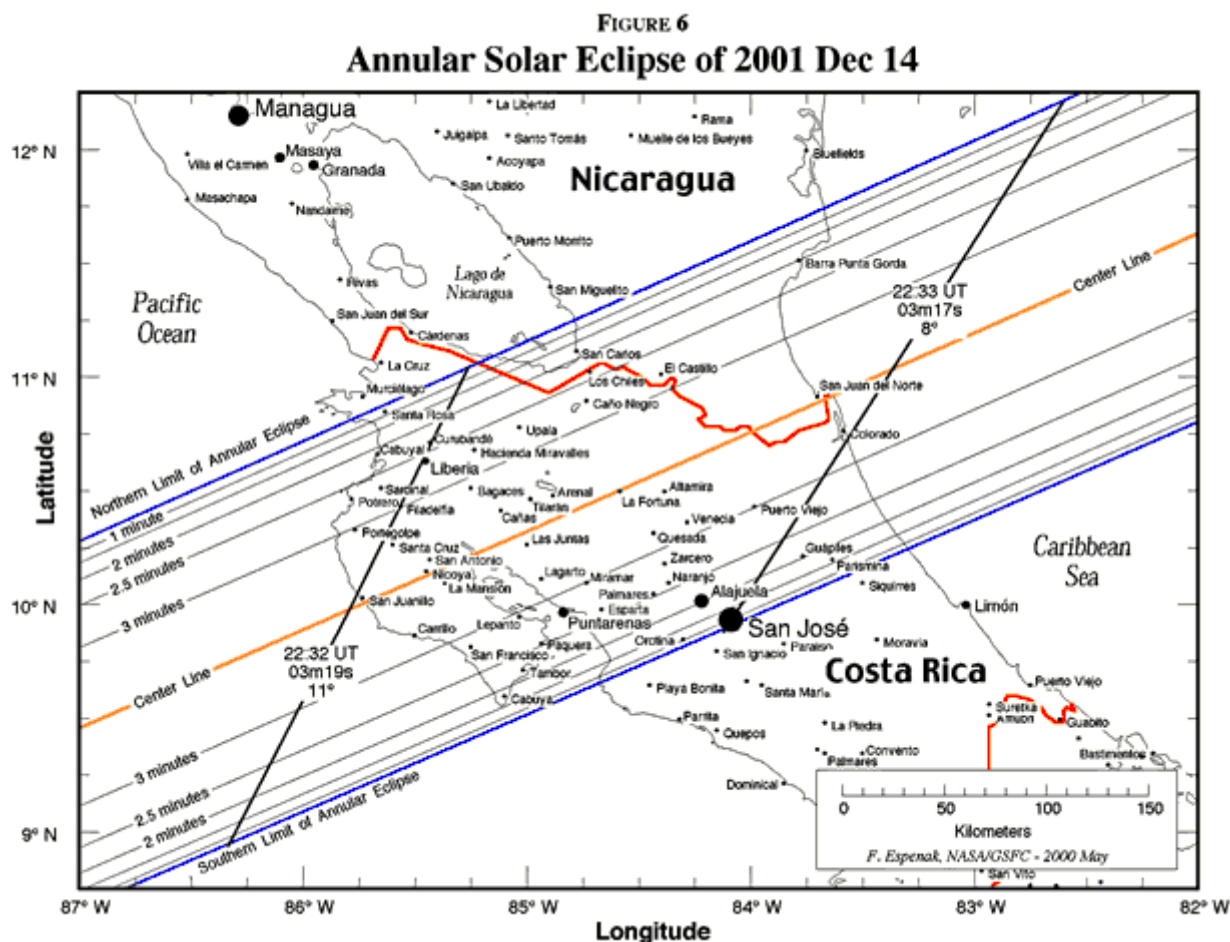
### starry review

Here is my latest review of Starry Night software which I use to simulate eclipses. The software helped me locate and photograph comet McNaught- Hartley in December <http://members.aol.com/kcstarguy/blacksun/cometpics.htm> but most recently few days ago helped me locate, hunt down and photograph my first asteroid Phaedra. (see the pic at <http://members.aol.com/kcstarguy/blacksun/asteroidpics.htm> (feel free to use the review for other sites, listserves etc but please post my byline and info as well). question, let me know

Dr. Eric Flescher (KCStarguy@aol.com) - webmaster Eric's Black Sun Eclipse website - <http://members.aol.com/kcstarguy/blacksun/eclipse.htm> -editor- Black Sun eclipse newsletter (eclipse and astronomy news etc- to subscribe send email to [blacksunnews-subscribe@egroups.com](mailto:blacksunnews-subscribe@egroups.com) Eclipse Train Land cruise June 2001- Host/presenter- <http://mayhugh.com/train/train.htm>

Starry Night by SPACE.com Canada, Inc. 284 Richmond Street East Toronto Ontario, CANADA, M5A 1P4 (416) 410-0259 (Phone) (416) 410-0359 (Fax) (800) 252-5417 (Orders) reviewed by Dr. Eric Flescher

## COSTA RICA 2001



From: Alejandra León <leonale@racsa.co.cr> To: SOLARECLIPSE <SOLARECLIPSES@AULA.COM> Sent: Tuesday, February 13, 2001 2:22 AM Subject: [SE] Annular Eclipse, Dec 14, 2001

### Annular Eclipse, Dec 14, 2001

Greetings from Costa Rica! Our non profit organization is preparing for the Annular Eclipse December 14th, 2001 that will be visible mostly in Northern Costa Rica and the south eastern side of Nicaragua. We will be preparing a site with information in Spanish and English. For the moment, we have a page in Spanish with a map in our web site: <http://cientec.or.cr/astronomia.html#eclipse2001>

If anyone is interested in coming to Costa Rica for this event, we can provide support and information. We will be expanding the Annular Eclipse section soon. More soon, Alejandra

Alejandra León Castellá Executive Director Fundación CIENTEC <http://www.cientec.or.cr> Tel:(506) 233-7701, Fax:(506) 255-2192 P.O.Box 8536-1000, San José, Costa Rica

## TOTAL SOLAR ECLIPSE DEC 4TH 2002

From: Eric Pauer <pauer@bit-net.com> To: Solar Eclipse Mailing List <solareclipses@aula.com> Sent: Monday, February 05, 2001 5:45 PM Subject: [SE] 4 Dec 2002 - Total Solar Eclipse Cruise

For those planning ahead, Ted Pedas and Royal Olympic today have announced an "African Eclipse Cruise - Voyage to Darkness to intercept the solar eclipse at sea on December 4, 2002."

<http://www.nauticom.net/www/planet/files/jun21ROC.html>

As some my remember, they cancelled their planned cruise for the 2001 total eclipse of the sun. Eric Pauer - pauer@bit-net.com - <http://www.bit-net.com/~pauer>

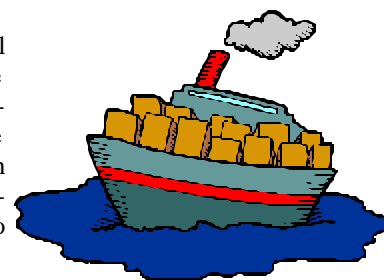
rom: <JohnLX200@aol.com>

To: <SOLARECLIPSES@aula.com>

The 2001 page started showing the 2002 content about a month ago. Sorry I forgot to post it to the list. Maybe I was paranoid someone would grab my first-choice cabin ;-)

I was told I got the first cabin confirmed on the cruise, when Royal Olympic accepted an \$1800 deposit from my travel agent on January 10 or 11.

Anyone on the list who is putting a deposit on the cruise, is welcome to privately email me for advice in selecting a cabin. I spent hours poring over the deck plans of both the Olympic Explorer and its sister ship the Olympic Voyager. The cabin numbers are almost but not quite identical on the two, so be sure to use the right deck plan. Also, the deck plans on the Royal Olympic site aren't of high enough resolution to read all cabin numbers accurately. I recommend the higher-resolution plans on [www.icruise.com](http://www.icruise.com) despite them having the decks themselves mislabeled with the order of decks from top to bottom reversed, at least as of a month ago.



I used Roy Mayhugh at [mayhugh.com](http://mayhugh.com) to book it for 4 reasons:

1. He has a low-price guarantee. I hope [icruise.com](http://icruise.com) or someone advertises a few rooms in my cabin category at a very low price at some point between now and 12/2002.
2. He specializes in eclipses and is very pleasant and competent. You'd think I'd be angry because his 2001 trip which I was booked on was canceled and replaced with one I didn't want to be on. To the contrary, I'm glad he personally made 2 trips to Africa to check out the arrangements and found the trip unacceptable, before winding up on it. He also spent an hour or two giving me very sound advice on how to get out of a difficult situation which I found myself in partway through rebooking myself on a new trip, completely independent of him. His advice worked.
3. My deposit refund from the canceled 2001 Kafue trip was on its way to him from Africa, and he agreed to immediately send Royal Olympic the money without any need for the refund to arrive and clear, or for me to send more money.
4. I had been in daily contact with him regarding my own logistics in replacing the 2001 trip, at the same time when he'd been in daily contact with Ted Pedas and Royal Olympic trying to get them to open up the cruise for booking and/or announce prices. I haven't heard firm prices yet, but the cruise is open for booking, and I'm sure it was partly due to his persistence in trying to get them to accept my money.

It was tempting to do 2 eclipses in a row on land, but I decided a cruise might be much easier to bring family members on, and probably more comfortable near the summer solstice down there. The cruise bookings are 100% refundable without penalty until quite late, so the land option is still open if I really like what I see on land in 2001 and want to try another safari.

I hope to see many of you on the cruise in 2002. John Hopper

Ted Pedas' 1973 African Eclipse Cruise (P&O: Canberra) 1994 Annular, Mt. Chocorua, NH USA MAPUG gathering, Aruba 1998 USA Eclipse Flight 1999 International Solar Eclipse Conference, Antwerp 2000 Kafue Park 2001, Karibu Safaris

*(Continued on page 33)*



## 2002

(www.karibu.co.za) Ted Pedas' 2002 African Eclipse Cruise (Royal Olympic: Olympic Explorer)

2003 Air?

2005 Cruise?

2006 Turkey?

2008 Air at sunrise over Canada, or on land in Asia?

2009 Cruise at max point of big one, or China?

2017 Can't wait

2024 Can't wait

2027 Of course

2045 If I retire to FL, you can bet it will be in the path of this big, perhaps final one for me.

2079 Advances in medical science required to see this from my current home.

From: Francis Murphy <fxmurphy@voicenet.com>

How much is the total package for one person?? Thanks Francis Murphy



From: Jeff Batten <jeff.batten@csun.edu> To: <solaRECLIPSES@AULA.COM> Sent: Wednesday, February 07, 2001 5:58 PM Subject: [SE] **2002 TSE in Australia**

Hello, Does anyone know the approximate circumstances of the Dec 4, 2002 Eclipse as viewed in Australia. Elevation of the Sun? Duration? Interesting places to view the eclipse? Weather Prospects? Thanks Jeff

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

There seems to be one overwhelming trend: The farther inland you go, the lower the Sun will be and the shorter the eclipse - but the weather prospects get much better. The actual chance of seeing the eclipse is probably very hard to calculate as the line of sight will encounter significantly more cloud as if the Sun were overhead.

It's still worth trying, IMHO: We went to La Jolla in 1992 to see the annular eclipse a few arc minutes over the horizon - with a perfect view. There I also learned how much a) atmospheric refraction and b) your own elevation above sea level help in cases like this: Without both effects we would have seen only half of the annular phase before sunset, but in reality we got to see the full show, up to 3rd contact. Daniel

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

> >Does anyone know the approximate circumstances of the Dec 4, 2002 Eclipse as viewed in Australia.

In two words: near sunset. I have compiled some info / links / animation on <http://eclipse.span.ch/2002.htm> (bottom) . The link to the Aussie site is no more working, I'll have to see if I can find it again (it had a good , detailed map)

> >Elevation of the Sun?

Depending on location, from 8 to 0 ° (sunset)

> >Duration?

Totality: about 30 seconds Flight Geneva - Adelaide: about 24 hours :-)

> >Interesting places to view the eclipse?

## 2002

in the sky. (just kidding :-) City of Ceduna. Or the Outback desert. Or on the web, on live webcast (just kidding, again, of course :-)

>>Weather Prospects?

dunno. But I suggest you check out the weather situation on various weather sites coming early December 2001, that could give you an idea on what the weather may look like on a December 4. And I guess much more information will become available after next June 21 event . Fred ? best regards, Klipsi

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

found the map again, on the site of the Astronomical Society of Southern Australia. go <http://www.assa.org.au/observing/eclipse2002/images/2002ec2.gif>

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

Surf Fred Espenak's web site: <http://sunearth.gsfc.nasa.gov/eclipse/eclipse.html>

If you don't find it right off, point your browser at: <http://sunearth.gsfc.nasa.gov/eclipse/OH/OH2002.html> to get info about eclipses in 2002. Scan about half-way down that page to the section about this eclipse, and look for the text, "Path coordinates and centre line circumstances are presented in Table 1." or, right underneath that, "Local circumstances for cities throughout the path are given in Table 2." Tables 1 & 2 are hyperlinked.

For all new guys, Fred's NASA web site is one of the favorites of the members of this eclipse list. You can get there from his private (ie, non-government) site, the URL of which is easy enough to get if you ask Yahoo! (or other search engine) to search for "Mr. Eclipse", as Fred is affectionately known. Surf this site; you'll see what I mean...and you'll want to bookmark it. Best, Jim Huddle

From Jean Meeus

Total Solar Eclipse of 2002 December 4 CENTRAL LINE

Because some people asked for information, here are data about the path of the total eclipse in Australia.

First column : geographical longitude, negative EAST from Greenwich!

Second column : geographical latitude in degrees and DECIMALS (NOT minutes and seconds)

Third column : Universal Time of central phase on central line

Fourth column : altitude of Sun's center above horizon, in degrees

Fifth column : duration of the total phase in seconds (calculated by considering a 'mean' lunar limb)

Last column : width of the path in kilometers

| LONGITUDE | LATITUDE | UT      | ALT.  | DUR.   | WIDTH |
|-----------|----------|---------|-------|--------|-------|
| ø         | ø        | h m s   | ø     | sec    | km    |
| -132.0000 | -32.7906 | 9 09 56 | 10.27 | 34.7 T | 38    |
| -133.0000 | -32.3947 | 9 10 16 | 9.28  | 33.4 T | 37    |

(Continued on page 35)

2002

|           |          |         |      |      |   |    |
|-----------|----------|---------|------|------|---|----|
| -134.0000 | -31.9951 | 9 10 33 | 8.29 | 32.1 | T | 36 |
| -135.0000 | -31.5922 | 9 10 49 | 7.30 | 30.9 | T | 35 |
| -136.0000 | -31.1861 | 9 11 03 | 6.31 | 29.6 | T | 34 |
| -137.0000 | -30.7771 | 9 11 14 | 5.32 | 28.4 | T | 33 |
| -138.0000 | -30.3655 | 9 11 24 | 4.34 | 27.2 | T | 32 |
| -139.0000 | -29.9515 | 9 11 32 | 3.35 | 26.1 | T | 31 |
| -140.0000 | -29.5352 | 9 11 37 | 2.37 | 24.9 | T | 29 |
| -141.0000 | -29.1170 | 9 11 41 | 1.39 | 23.8 | T | 28 |
| -142.0000 | -28.6970 | 9 11 43 | 0.42 | 22.6 | T | 27 |

For all new guys, Fred's NASA web site is one of the favorites of the members of this eclipse list.

Jean Meeus

From: Stephen McCann ITN <stephen.mccann@roke.co.uk>

**Total Solar Eclipse of 2002 Dec 04**

Geocentric Conjunction = 07:38:44.4 UT J.D. = 2452612.818570  
 Greatest Eclipse = 07:31:10.9 UT J.D. = 2452612.813321  
 Eclipse Magnitude = 1.02437 Gamma = -0.30230  
 Saros Series = 142 Member = 22 of 72

Sun at Greatest Eclipse  
(Geocentric Coordinates)  
 R.A. = 16h41m50.9s  
 Dec. = -22°13'29.1"  
 S.D. = 00°16'13.6"  
 H.P. = 00°00'08.9"

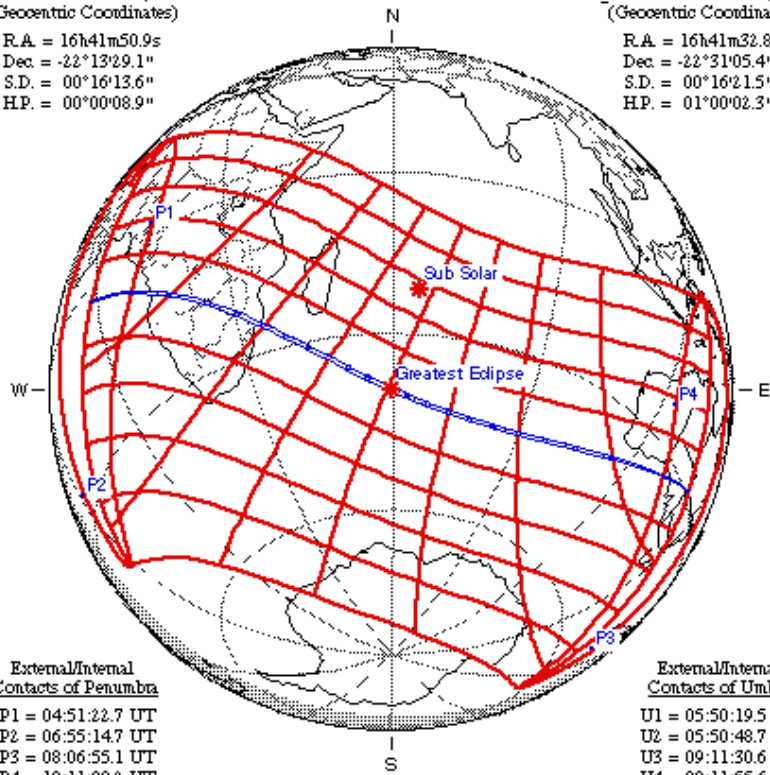
Moon at Greatest Eclipse  
(Geocentric Coordinates)  
 R.A. = 16h41m32.8s  
 Dec. = -22°31'05.4"  
 S.D. = 00°16'21.5"  
 H.P. = 01°00'02.3"

Jeff, Also have a look at :- <http://eclipse.astroinfo.org/sofi/maps/solecl-2002-12-04-australia2002.html> which may also help to give you a rough idea of conditions. Kind regards Stephen McCann

From: Sylvain Rivaud <pithecland@chez.com>

Also look at :

<http://www.chez.com/lepithec/eclipse/>



External/Internal Contacts of Penumbra  
 P1 = 04:51:22.7 UT  
 P2 = 06:55:14.7 UT  
 P3 = 08:06:55.1 UT  
 P4 = 10:11:00.2 UT

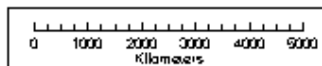
External/Internal Contacts of Umbra  
 U1 = 05:50:19.5 UT  
 U2 = 05:50:48.7 UT  
 U3 = 09:11:30.6 UT  
 U4 = 09:11:55.6 UT

Local Circumstances at Greatest Eclipse

Lat = 39°28.3'S Sun Alt = 72.2°  
 Long = 059°32.8'E Sun Azm = 15.8°  
 Path Width = 87.0 km Duration = 02m03.8s

Ephemeris & Constants  
 Eph. = Newcomb/LE  
 ΔT = 65.8 s  
 k1 = 0.2724880  
 k2 = 0.2722810  
 Δb = -0.6" Δl = 0.0"

Geocentric Libration (Optical + Physical)  
 l = 3.67°  
 b = 0.42°  
 c = 6.16°  
 Brown Lun. No. = 989



F. Espenak, NASA/GSFC - Thu, 1999 May 27

## AFRICA 2001

From: Patrick Poitevin <patrick\_poitevin@hotmail.com> To: SE Mailing List <SOLARECLIPSES@AULA.COM> Sent: Thursday, February 22, 2001 7:54 PM Subject: [SE]

### Measurements during solar eclipses

Dear All, Anybody on this Solar Eclipse Mailing List whom want to participate in a project for measuring meteorological changes during the coming solar eclipses. If any interest, please send me a private mail. Purpose is to perform meteorological measurements from as much as possible locations on the solar eclipse track.

This is a very interesting project for anybody who has the intention to see the solar eclipse. Looking forward to hear from you. Best regards, Patrick

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

Here in the USA, digital stainless steel meat thermometers can be purchased for about \$10 US. I bought mine in the grocery store. They are designed to be used to test how well done your meat is when you barbecue, so they have to be reasonably accurate. Buy two and mount one in the shade about 2 meters above the ground. A roll of electrician's tape will be useful for this. Push the point of the other 1 or 2 inches into the ground. Read and record each one every five minutes or so, and once during totality (only takes a few seconds) and plot the graph when you get home. In Turkey and in Aruba, we measured air temperature changes of about 6 Celsius degrees, and in Turkey we measured about 3 Celsius change in the ground temperature. This is a nice experiment for children from age 6 to 106, at a total price of about \$25 US! Oh, and make sure you put a new battery in each one before you leave home.... Jim Huddle

From: Bob Morris <morris@sce.carleton.ca>

Ha! A meat thermometer accurate? To about 10 degrees if you're lucky, Jim. :-)

A much better solution is a furnace thermometer, which looks like a meat thermometer but is easily accurate to about 1 degree.

They are designed to be put into a small hole (~ 1/8") in your furnace flue in order to check that your furnace or air conditioner is operating up to spec. The tech will measure temp in the hot air and cold air ducts and then compute temp rise or fall, which is important to determine if your furnace or AC is working properly.

Mine goes from 0 to 220 deg F and I had it checked against the furnace guy's very expensive digital version and found it accurate.

Calibrated every 2 degrees and readable to 1 degree.

Only drawback is that the face is much smaller than an oven thermometer: about 1.25" dia. Probe is about 6" long.

Cost? About \$15 at a heating/AC supply store.

BTW, I also use mine to check out hot water temp which should be about 140 F for a dishwasher and a clothes washer to work correctly.

Conventional air thermometers will burst at about 110 F! Bob Morris

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

Actually, I checked my "Good Cook" brand digital meat thermometer by attaching the business end to a good mercury thermometer I borrowed from a chemistry lab down the hall. I used rubber bands to hold the sensitive parts of the two thermom-

*(Continued on page 37)*

## AFRICA 2001

ters tightly together. Then I set them outside in the shade one summer morning, and every so often as the temperature changed, I went out and recorded both thermometers. In this way, I had a calibration from about 75 degrees Fahrenheit to about 95 or so. Then I also checked near freezing by putting both in the same ice-water bath, and near boiling in the obvious way. In all cases, the Good Cook read between 0 and 0.9 Fahrenheit degrees lower than the mercury thermometer. That was Wed, 7 July 99. Astonished, as Bob is, that the meat thermometer performed this well, I tried it again on 30 and 31 July and on 1 Aug 99. On these days, the Good Cook digital meat thermometer was always between 0 and 0.7 degrees F below the mercury thermometer - and on 31 July, it got up to 100 F. Although I have not yet run a calibration of the other digital meat thermometer I own (this one doesn't have a brand name on it), I'm confident that these digital ones are accurate to within a degree (F) or so. Both of the ones I own have a readout precision of 0.1 degrees. The Good Cook model only reads in F, but the one I have not calibrated can be switched to read in Celsius or Fahrenheit. Both have LCD readouts, the numbers of which are about 1 cm high, and they can read from about -40 F to about +300 F. Both thermometers have stainless steel probes about 6 inches long - very easy to push two inches deep into the dirt out in the Zimbabwean bush....

I think the analog meat thermometers are a lot worse, but I have not done that experiment. Jim Huddle

From: Bob Morris <morris@sce.carleton.ca>

Oops! I thought that Jim Huddle was talking about analog meat thermometers! LRM

From: Stephen McCann ITN <stephen.mccann@roke.co.uk> To: Assoc Prof J R Huddle <huddle@usna.edu> Cc: Patrick Poitevin <patrick\_poitevin@hotmail.com>; G. Anderson <gandertrash@home.com>

Prof J R Huddle, I'm also planning to do some measurements for both Patrick and Jay Anderson and I'm currently thinking of using an 'ibutton' module :- <http://www.ibutton.com/ibuttons/thermochron.html> which I think is a brilliant idea.

I will of course, purchase a unit shortly and then check it before I go. Kind regards Stephen McCann



### Rugged iButton Attaches to Anything

About the size of 5 dimes, the 16mm Thermochron is so small you can attach it unobtrusively to any container surface or wall on bottles, totes, boxes, crates, pallets, air cargo containers, refrigerators, semi trailers, railroad freight cars, and archival storage rooms. The iButton's stainless steel armor withstands dirt, water and rough treatment. You can step on it, splatter it with fish entrails, or drop it into an ice water bath it continues to log effortlessly. Underneath the armor, a single silicon chip integrates a digital thermometer, clock/calendar and protected memory. The stored data is designed to be resistant to tampering from unscrupulous intermediaries. Attempts to alter the logged thermal history will be detected electronically.

#### Versatile Data Storage: Log and Histogram Formats

The Thermochron stores data in two different ways that serve different application needs. First, it can wake up to take 2048 time and date stamped temperature readings at equal intervals between 1 and 255 minutes, then store the data in a time temperature log format.

To fully utilize the recording mission, the user chooses the time to begin temperature taking, sets a sampling rate, sets

*(Continued on page 38)*

## AFRICA 2001

high and low alarm thresholds, and determines whether to rollover when 2048 time and temperature readings are completed or to simply stop logging. This method of data storage records when a critical thermal exposure occurred and helps you assign accountability for any resulting loss of product quality.

Meanwhile, the ThermoChron also simultaneously stores each temperature sample in a histogram. The histogram memory consists of 56 bins in 2 degree increments; each bin holds 65,500 temperature readings for up to 10 years. The histogram method of data storage serves applications requiring either long term monitoring or the ability to instantly assess thermal compromise. When storing blood or other biomedical products, it's critical to know that thermal exposure occurred; when it happened is not. The histogram instantly reveals whether user-defined high or low temperature thresholds have been exceeded, and for how long.

### Missioning the ThermoChron

You can mission the ThermoChron iButton with a PC or handheld. You touch the button to the PC or handheld's Blue Dot receptor, a \$15 interface to a computer, and use free evaluation software from this site to set start time, sampling rate, and alarm threshold.

### Viewing and Tracking ThermoChron Data on the Web

As the iButton roams, its recordings can be viewed on the spot by touching a hand-held computer or pen-style probe. The handheld can also instantly download the ThermoChron data to a Web page when it's convenient to connect to the Internet. The chip's factory-lasered registration number serves as a unique address that points to a specific Web page, which can report the thermal experience of a shipment. This network address can become the means of determining where a ThermoChron was last seen, much like a package tracking service.

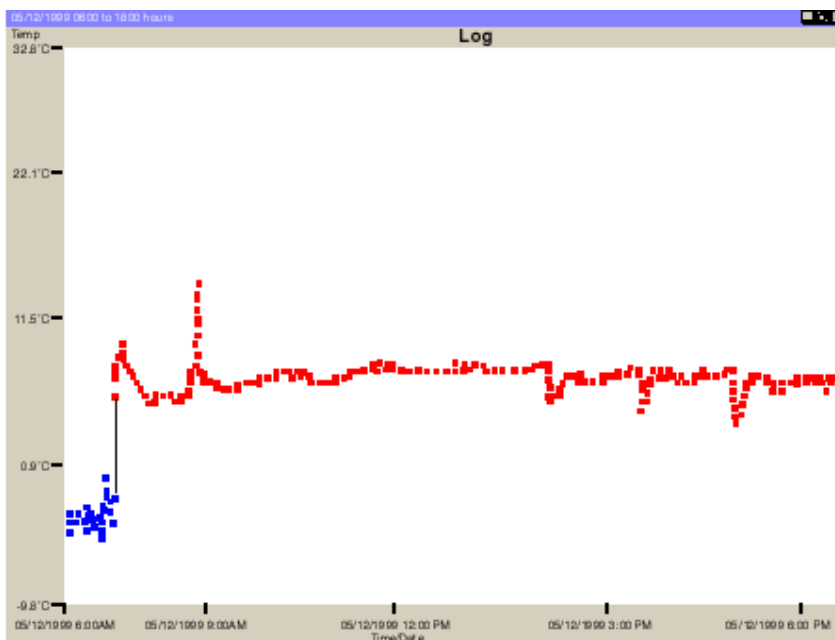
### How to Download Free Evaluation Software

You can download a demonstration and evaluation program. Choose the Windows 32-bit install 3.11 version of iButton-TMEX Runtime Environment (RTE). You must have a ThermoChron and a Blue Dot receptor in order to access the program, which is a module within the general RTE. Once you have plugged in the Blue Dot receptor and snapped the ThermoChron into the Blue Dot, open the program and choose iButton Viewer to locate your ThermoChron's serial number. Next, click on the number to bring up a program wizard that will guide you through the steps to set up a time and temperature logging mission.

Briefly, the steps include:

- Set the clock.
- Set the time alarm.
- Set the sample rate.
- Set the temperature alarm.
- Set the mission start delay (time to start).
- Check when mission will end; select data rollover or not.
- Finish.

Programmers: You can also download a Java™ example for the DS1921 here: [ftp://ftp.dalsemi.com/pub/auto\\_id/public/iButtonTMEXJava0-02-3.zip](ftp://ftp.dalsemi.com/pub/auto_id/public/iButtonTMEXJava0-02-3.zip)



*(Continued on page 39)*

# AFRICA 2001

### Starter Kit Available

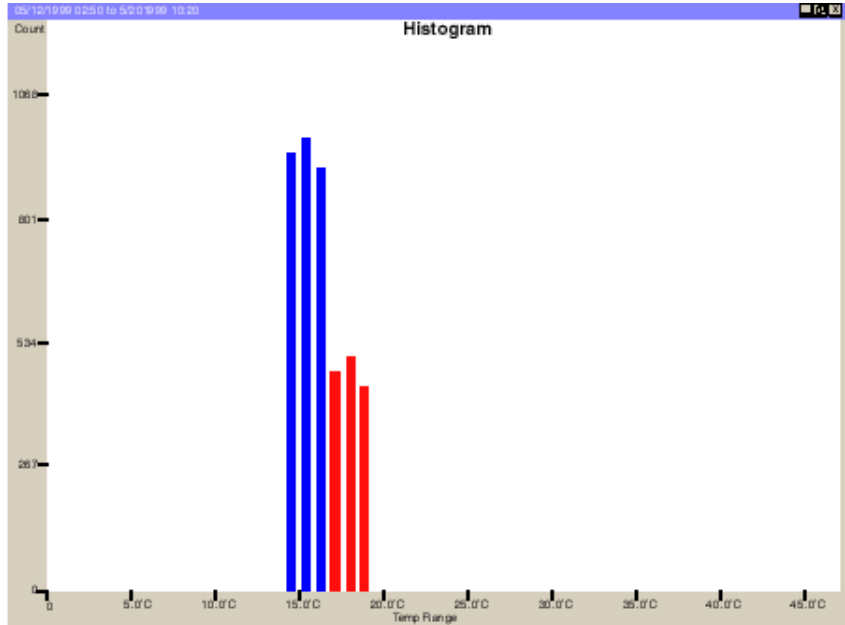
If you want to get up and running quickly, the DS1921K Thermochron iButton Starter Kit contains all of the hardware necessary to configure a Thermochron iButton and review the resulting data. The data can also be saved or imported into other applications.

The kit includes:

- DS1921 Thermochron iButton
  - DS9093F iButton Keyring Fob Attachment
  - DS907U-009 9-pin Universal 1-Wire COM Port Adapter
  - DS1402D-DR8 Blue Dot Receptor with RJ-11 Connector
  - Instruction Sheet
- The DS1921K Kit can be ordered from this site and costs \$25 plus shipping and handling.

### Sign Up for the Thermochron Interest Group

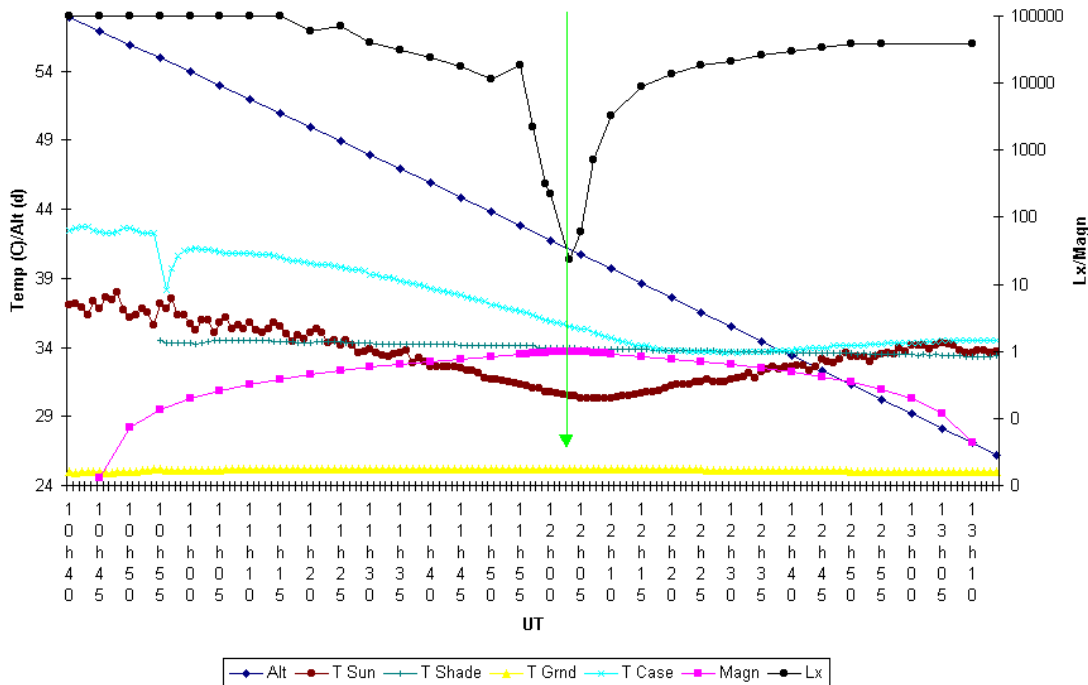
If you have questions and ideas, you'll want to join the Thermochron Interest Group, where you can keep up with developments and swap ideas with other Thermochron users. To sign up, send an e-mail to [majordomo@iButton.com](mailto:majordomo@iButton.com) with the words "subscribe Thermochron" in the message body.



### Additional Information

DS1921 Thermochron iButton Software Download, Thermochron iButton FAQ, "Transmitting Data and Power over a 1-Wire Bus" (Sensors Magazine Article), Thermochron Interest Group Archive DS1921 Data Sheet, News release

11 August 1999, Tiran (IRAN)



Measurements on the left from Joanne and Patrick in 1999 Iran and with normal data logger.

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1

From: Jeff&Aya <spacepod@mx8.tiki.ne.jp> To: <eclipse@hydra.carleton.ca> Sent: Wednesday, February 07, 2001 8:11 AM Subject: [eclipse]

**Pregnancy and the eclipse 2001**

Hello all, After the spectacular time we had in Europe for the 1999 eclipse my wife and I made plans to see the June 21st eclipse. But our situation has changed and we have a couple of questions. At the time of the event she will be about 6-7 months pregnant. This is apparently a "safe" time during the pregnancy, but does anyone have any experiences with travelling while pregnant? Also due to the rather remote location of the eclipse we were wondering if anyone had any advice about where would be a good location for viewing (close to medical care, no malaria, yellow fever etc.) as far as countries are concerned. We live in Japan and the flight itself could be quite long so we are considering doing it in stages rather than one big chunk.

Also if anyone has been to the sites for this eclipse which country seems to have the least bone jarring transport etc.. Thanks for your time and reply personally if you wish! Jeff and Aya

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

Then there is this - [http://www.newscientist.co.uk/news/news\\_224970.html](http://www.newscientist.co.uk/news/news_224970.html) - article (I was never quite sure whether it is serious) that talks about health risks from the stress eclipses cause even in educated people ... Dan

From: <Skywayinc@aol.com>

In July 1990, my wife and I traveled 11,000 miles in 46 hours to see a 73-second total solar eclipse. She was six months pregnant at the time.

We flew from New York to San Francisco on Friday night, July 19. Upon landing in San Francisco, we checked in at the airport motel. We awoke early on Saturday morning, July 20 and went back to the airport to board another flight to Honolulu (with a stop in Maui). We were in Honolulu for about 45 minutes. The same aircraft (an L-1011) that brought us to Honolulu, was then turned around and headed back to San Francisco. Midway through the flight, we saw totality from 27,000 feet about midway between Hawaii and San Francisco. The whole escapade (which involved delaying the flight by exactly 41 minutes) was arranged with the carrier in advance.

After we landed back in San Francisco around midnight, we

went back to our motel room for some much-needed sleep, then first thing on Sunday morning, we flew back home to New York!

BTW . . . when we got back home, I turned to my wife and said, "How did you like your Hawaiian vacation?"

Next year, I made it up to her by serving as the meteorologist for a one-week eclipse cruise around the Hawaiian Islands. -- joe rao

From: Cathy Conwill <cconwill@tkb.att.ne.jp>

Dear Jeff, Congratulations! I am extremely cautious by nature, and I am not considering this eclipse, largely because I am not comfortable making that type of trip with children (mine are 10 and 5).

For you, the travel to Africa is one thing, but a bigger concern is the facilities or lack of them when you get there. We all know pregnant mothers who have had unexpected complications or births in the 7th month, what would be the options not just for basic medical care, but for high-risk pregnancy monitoring or a neonatal intensive care unit? Is there a safe blood supply?

What preventative medicine would be recommended for visiting Africa? Hepatitis A immunization? Anti-malarial drugs? Slathering up in toxic chemical insect repellents? Why risk taking those things during a pregnancy?

Food or water contaminations that a healthy person won't detect, or can recover from in a day or two can have serious effects on the unborn, like toxoplasmosis or salmonella. And if you take the cruise option, even good cruise ships can have outbreaks of food poisoning.



Take a look at the U.S. Centers for Disease Control Travelers' Health page: <http://www.cdc.gov/travel/>

Click on "destinations" to see a world map, and then click on the regions of Africa to see what the specific health risks are.

For what it's worth, my one international trip when I was about 6 months pregnant was to Singapore. The 7 hour trip from Japan was fine; my big problem was with the customs and immigration inspector in Singapore. He wanted to know how pregnant was I, did I have a doctor's note permitting travel, did I have a return ticket out of Singapore before the due date...so keep that in mind if you decide to go ahead with the trip. Best regards and omedeto gozaimasu, Cathy

*(Continued on page 41)*



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From: <Skywayinc@aol.com>

Correct! We experienced totality at 4:11 UT/July 21, which translated into 6:11 p.m. on July 21, Hawaii Standard Time. As you can see, it's nearly 11 years later and I'm still screwed-up by all the time changes. :) -- joe

From: Winston Anderson <winston.anderson@BTGroup.co.za>

Hi Jeff and Aya, I don't know much about flights etc., but I can tell you a bit about the health once here.

I'm a South African citizen and have travelled to Botswana, Zambia and Zimbabwe often before (not Moçambique or Madagascar).

Of the countries in the region, South Africa has by far the best health system, and if you do come to one of the viewing sites, I suggest you make plans for backup in terms of airlift should there be an emergency. South African health services can, in an emergency, airlift you from Zimbabwe straight to Johannesburg General Hospital, which has the continents best government ICU, obstetrics and gynaecology depts. There are also a number of excellent private clinics in Johannesburg. Should you want me to provide a list, you can email my personal account and I can send you some names.

Zimbabwe has the best health system of the countries where totality occurs, and Mana Pools is probably the best area with access in Zim. It is a Zim National Government Game Reserve, and you will have access to Kariba, and then to Harare.

Zambia's infrastructure is not that good, and then I would put Madagascar, and lastly Moçambique.

Angola, as far as I understand, has relatively good health systems - but it is not safe as a war torn country!

Of the many possibilities that you might hear of abroad, often people are alarmed by hepatitis etc., but these are only transferred by blood etc. (like HIV), and if you are in a hospital and should need blood this would not be a danger in any of the countries, the processes are all geared for AIDS prevention, and so all blood will have been tested.

Of the contagious diseases that I think the major one you should be aware of is malaria. As far as I know, it is not wise to take any preventative anti-malarial medication while pregnant, and malaria carrying mosquitoes are unavoidable in all of the countries (not in the Southern parts of South Africa - but then this is not where you want to be for the actual

eclipse). However, we have many pregnant friends who have gone on holiday to areas where malaria occurs, and if you are overly strict with mosquito nets, and putting on creams etc. to prevent bites, one can avoid being bitten.

In my lifetime, although I have been inoculated, as have most others here, I have never yet met anyone with yellow fever or who has had yellow fever, in all my travels in Southern African countries. I think this is more true of countries further north, who come to South Africa to be treated, and so add to our statistics.

The best roads of the countries are in Zim, and from a South African comparison they aren't that good. Zambia has terrible roads!!!, and Moçambique doesn't have an infrastructure comparable to any of the others at the correct latitudes! I would suggest that whatever route you do take if you come out, that you come via Johannesburg, which has developed world infrastructure, 4 terminal airports with many facilities etc. and then detour off north only for the necessary time, going via Harare or Vic Falls (rather than Lusaka). You could take a 24hour ferry from Vic Falls to Kariba - which is very smooth (no rain storms in June).

GSM cell phone reception is available in Zim if you have a roaming GSM phone (see <http://www.netone.co.zw/html/coverage.asp?secc=cover> and [http://www.econet.co.zw/beta/about\\_econet/coverage\\_map.htm](http://www.econet.co.zw/beta/about_econet/coverage_map.htm)). My cell phone didn't work very well in Zambia (only at Vic Falls but because of cell masts from the Zim side of the falls), and I don't think it will work at all in the right latitudes of Moçambique. Hope this helps somewhat ... Regards Winston



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From: John Leppert <johnleppert@peoplepc.com>  
To: <SOLARECLIPSES@AULA.COM> Sent:  
Wednesday, February 28, 2001 2:34 PM Subject:  
[SE] **Eclipse traveler....**

If you are traveling to Zimbabwe/Zambia in June with one of the Civilized Adventures tour groups based in Calgary, please contact me. I'm going on the tour that departs 17 June and returns 2 July. John Leppert Bismarck ND



From: John Leppert <johnleppert@peoplepc.com>  
To: <SOLARECLIPSES@AULA.COM> Sent:  
Wednesday, February 07, 2001 10:13 PM Subject:  
[SE] **.Cancellation insurance..**

Can someone point me towards a reputable company for purchasing trip cancellation insurance and trip medical insurance for the Zimbabwe/Zambia solar eclipse in June? John Leppert Bismarck ND

From: Vic & Jen Winter, ICSTARS Inc.

John, For this program recommend one of two trip cancellation / medical insurance companies.

Med-Trip Plus offers a very reasonable plan TravelGuard has one that's slightly higher, but is also ok.

These two are the only ones I know of that offer protection in the event of tour operator default. If you get to Zimbabwe and your tour operator has disappeared (with your money) then you want to be covered.

Med-Trip is one of the least expensive and has a much better evacuation policy also. They cover up to \$500,000 to get you out and home if something goes wrong. This can get costly in a place like this. - - Their toll-free medical and local doctors networks aren't bad either. M.T. covers pre-existing medical conditions always (well, unless you're terminal) but you have to buy it before you make your last trip payment. Travel Guard offers coverage for pre-existing, if you buy it within 7 days of your initial reservation.

I can't tell you how much it will run without knowing the cost of your trip. If you want to email me directly, I may even be able to get you a cut rate on that. (unfortunately, I don't know of any who sell insurance in the event that you're clouded out) clear skies! Jen -

### GERNOT & PASCALE ON THE ROAD

From: Patrick Poitevin To: SE Mailing List Sent: Monday, February 05, 2001 10:53 PM Subject: [SE] Fw: **expedition start P.demy / G.meiser**

Hi all, Those who view the slide presentation of Pascale and Gernot at the Solar Eclipse Conference last year in Antwerp, must remind the expedition they wanted to do. By truck they drive from Germany to Zambia for the total solar eclipse.

Please see below their goodbye message: From: Odyssee Subject: expedition start P.demy / G.meiser

Dear Patrick and Joanne! On the road at least! we started our expedition with our Unimog vehicle this afternoon in direction Sambia! Would it be OK for you to announce it in the mailing list; we would be very glad if you could give all the members our website address: [www.african-odyssee.de](http://www.african-odyssee.de) and for whom wants our e-Mail to communicate with us during the all expedition. On our website we write a diary about our experiences and meetings with people. We started the website in german, just announce that the french and english version will work in the next days or weeks! Thank you and all the best for both of you! Greetings from Gernot also! Pascale Demy



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From: Olivier Staiger <olivier.staiger@span.ch> To: <SOLARECLIPSES@AULA.COM> Sent: Friday, February 09, 2001 9:46 PM Subject: [SE] **cheap airfare to Lusaka**

yo ! I just bought my KLM /Kenyan Airways ticket to Lusaka. Got a good rate. Learned an interesting detail: "high season" starts June 15. I fly June 14, thus still got the lower season rate :-)



Olivier Staiger

From: Mark Friedman <MarkFriedman1@usa.net> To: Solar Eclipse Mailing List <SOLARECLIPSES@AULA.COM> Sent: Wednesday, February 28, 2001 3:14 AM Subject: [SE]

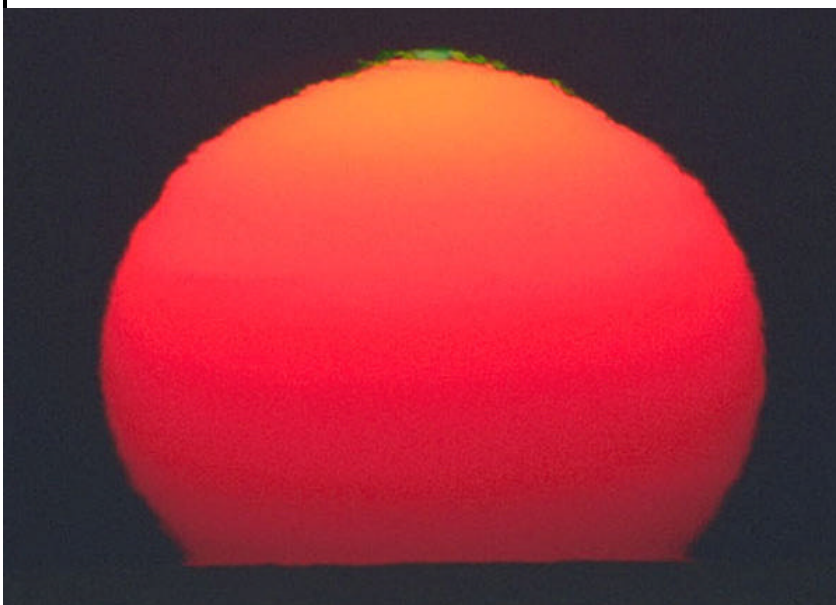
**Zimbabwe Map**

I purchased a traveler's reference map of Zimbabwe last year in anticipation of traveling there for the upcoming TSE. As my luck has it now I am unable to go. If anyone who is going to Zimbabwe would like the map I will sell it for \$5 US plus postage. The map is in mint condition. Go to <http://home.columbus.rr.com/friedman/zimbabwe-map.gif> to view the front and back cover. If you are interested email me off the list at MarkFriedman1@usa.net.



**Green Flash by Juan Carlos Casado - 2000 May 7**

A Green Flash from the Sun, Credit & Copyright: Juan Carlos Casado  
Explanation: Many think it is just a myth. Others think it is true but its cause isn't known. Adventurers pride themselves on having seen it. It's a green flash from the Sun. The truth is the green flash does exist and its cause is well understood. Just as the setting Sun disappears completely from view, a last glimmer appears startlingly green. The effect is typically visible only from locations with a low, distant horizon, and lasts just a few seconds. A green flash is also visible for a rising Sun, but takes better timing to spot. A slight variant of this was caught in the above photograph, where much of the Sun was still visible, but the very top appeared momentarily green. The Sun itself does not turn partly green, the effect is caused by layers of the Earth's atmosphere acting like a prism.



From: BrdwyBabs2@aol.com To: eclipse@hydra.carleton.ca Sent: Friday, February 09, 2001 7:06 PM Subject: [eclipse]

**Request for Info.**

Hi Everyone, I have made tentative arrangements to travel to Zimbabwe and Zambia in June to view the eclipse with Mayhugh Travel out of Ridgecrest, CA. I was wondering if anyone on the list has had any experience traveling with this company. If you haven't traveled with them, do you know anything about them or their reputation?

Any information you can provide would be gratefully appreciated.  
Thanks, Barbara



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From: Vic & Jen Winter, ICSTARS Inc. To: SOLARECLIPSES@AULA.COM Sent: Monday, February 05, 2001 5:00 PM Subject:

**[SE] extra airline tickets**

We have an extra number of group tickets to Johannesburg that we don't need. We'd rather not send them back to the airline where they will only be marked up to nosebleed rate. We'd rather let the extra seats go for the cheapest previously available consolidator rates. If anyone is still looking, let them know. Details can be found on the website. Jen Winter -

From: <JohnLX200@aol.com>

My advice to anyone considering doing this, or booking any tickets to anywhere other than Lusaka or where their tour starts and ends, is this:

Be ABSOLUTELY SURE you can get the needed flights WITHIN Africa before getting committed to a non-refundable ticket TO Africa.

Otherwise, allow several days slack to make sure you can take buses, trains, or stand by for flights. Getting into and out of Victoria Falls is getting to be nearly impossible if you don't buy it at the same time as an SAA flight into Africa.

Bear in mind that South African Airways virtually owns the local routes down there, so perhaps Jen will help you get these local flights along with the flights to JNB. There are many seats from JNB-VFA (Victoria Falls) and JNB-HRE (Harare) and JNB-LUN (Lusaka) which have been reserved for tour operators. Hence most flights are showing sold out in economy, and many are selling out in business class also now. The tour-operator seats will have to be confirmed or released 3 months (or is it 90 days?) before the flights, so seats may open up in March. Or they may not.

I nearly had to throw away 3 nonrefundable London-Capetown-London tickets totaling slightly over \$2000 for this reason, and was able to salvage the trip only by booking all my flights within Africa in business class. It wasn't cheap, but it wasn't as bad as it sounds either. All the cheap economy fares were gone long ago, so the increment over full fare wasn't nearly as bad as throwing away 3 international nonrefundables and starting over. But if I could do it over again, I'd INSIST on getting ALL my flights confirmed at the same time.

Air Namibia still had some low-priced capacity into Zambia when I was looking, but their flights only operate on certain days, so I couldn't use them.

Consolidator fares on SAA from the USA are tempting, but also consider what length of time you want to spend on a less-than-excellent flight. Check out flyertalk.com for info on the super-long SAA flights, especially the one ones on the way back which require a refueling stop. Apparently the flights to Atlanta stop in Ft. Lauderdale ("so close yet so far") and the ones to JFK stop in the middle of the ocean. Sometimes they let you off the plane, sometimes you sit for 3 hours on the ground in a full 747. Compared to taking nicer flights via London, or perhaps Germany, there are pros and cons. John Hopper

From: <Kidinvs@aol.com>

I still have some extra seats if anyone needs them on Air Zimbabwe. They depart from London on 6/19 for Lusaka.. arriving 6/20 at 10am. They depart from either Lusaka, or Vic Falls (your choice) back to London (all via Harare) on 6/27. Price is \$1200 per person, incld. tax. Send me an email directly if you have interest. Eric Brown

From: hilde & werner <antares@freegates.be> To: SOLARECLIPSE <SOLARECLIPSES@AULA.COM> Sent: Monday, February 12, 2001 9:40 PM Subject: [SE]

### 20 day eclipse safari

Dear Eclipschasers, This Wednesday, 14 february, at 20.00h, there is an info session about a 20 -day eclipse/safari adventure through South Africa, Zimbabwe and Zambia at the popular observatory Urania, Mattheessenstraat 60, 2540 Hove, Belgium. More info on <http://www.urania.be> or at mobile +32.475.29.11.59 Clear skies! Werner Hamelinck

From: Don Fleming <DFleming@epsb.edmonton.ab.ca> To: <eclipse@hydra.carleton.ca> Sent: Saturday, February 24, 2001 9:14 PM Subject: [eclipse] Solar Eclipse Safari

Anyone looking for a relatively low priced safari to view the 2001 solar eclipse in Zimbabwe may find the following information of interest.

Solar Eclipse Safari Zimbabwe, Africa June 21, 2001

Experience one of the world's most unique vacations. Join Tsoro Safaris in the heart of unspoiled Africa for the wonder and magic of a total eclipse of the sun.

On June 21, 2001, the moon will move in front of the sun creating a narrow strip of total darkness across Africa. Early in the afternoon, the shadow of the moon will sweep in from the Atlantic Ocean, across the rugged landscapes of Angola and Zambia and plunge more than 200 kilometers of the mysterious Zambezi river into total darkness. During the approximately three and one half minutes of the total eclipse, stars and planets will appear and tiny rainbows will dance about the ground. The black circle of the moon will be surrounded by a dazzling halo of solar flares and the horizon in every direction will be bathed in the vibrant hues of this magical mid-day sunset.

Don't miss out on this exciting opportunity to participate in a once-in-a-lifetime holiday. Tsoro Safaris, in cooperation with long-time eclipse chaser Don Fleming, have designed a truly amazing itinerary of events for your pleasure. You will travel leisurely down the Zambezi in sturdy Canadian-style canoes viewing the wildlife of Zimbabwe's Mana Pools National Park - a UNESCO World Heritage Site - home to thousands of elephants, buffalo, zebras, hippos and antelope. In addition to shore-line canoeing, you will explore this wild paradise on guided walks and game drives. Experienced, armed guides ensure your safety at all times. Comfortable accommodation and first-class catering is provided in tented camps on islands and mid-river sand banks. You'll fall asleep at night in the midst of the exotic sounds of the tropical bush.

Space is limited. Call today to reserve your place on this incredible tour. Reservations and payment may be made through:

CANWEST TRAVEL TSORO SAFARIS Ph. (403) 340-8802 Ph. 011-263-61-2925 Fax: (403) 309-3499 Fax: 011-263-61-2426 Call toll-free 1- 800-565-8598

Email: [canwest.travel@home.com](mailto:canwest.travel@home.com) Email: [tsoro@zol.co.zw](mailto:tsoro@zol.co.zw) [www.envirotours.com/canwest](http://www.envirotours.com/canwest) [www.tsoro.co.zw](http://www.tsoro.co.zw)

Tsoro Safaris Tsoro Safaris has been conducting tours of the Zambezi River and Mana Pools National Park since 1994. Owned and operated by local, professional safari guides, Tsoro is one of only a few, select companies allowed to operate river and land safaris in the Zambezi Valley. More information on Tsoro Safaris may be found at [www.tsoro.co.zw](http://www.tsoro.co.zw) or at [www.safarizimbabwe.com](http://www.safarizimbabwe.com) Don Fleming

Don Fleming has been following eclipses since 1979. His enjoyment of this rare and wonderful event has taken him to Mongolia, Bolivia, Turkey, Mexico, Aruba and Saskatchewan. When he is not chasing eclipses he serves as the Chairman of the Board of Trustees of Edmonton Public Schools. His knowledge of eclipses is in-depth and practical. A writer and teacher by profession, he holds a Masters degree in Communications.

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#### Itinerary

Day One: June 12 Meet in Kariba, Zimbabwe. Overnight Kariba (Hotels will cost from \$60/ person and up and should be booked well in advance through Tsoro Safaris.

Day Two: June 13 Transport by four-wheel drive to canoe launch site on the Zambezi river at Chirundu. Briefing and orientation. Leisurely canoeing and wildlife viewing. Overnight mid-river on Mongwe Island.

Day Three: June 14 Canoeing entering the southern border of Mana Pools National Park. Overnight on Lone Acacia Island. Eclipse information and presentation.

Day Four: June 15 Exploring the Mana Pools shoreline of the Zambezi, game viewing. Overnight on Trichlea Island.

Day Five: June 16 Canoe to camping spot in Mana Pools National Park. Walking safari or game drive till sunset.

Day Six: June 17 Game drive in four-wheel drive vehicles or walking safari in UNESCO World Heritage Park

Day Seven: June 18 Game drive or walking safari with sunset drive to waterholes to view wildlife.

Day Eight: June 19 Return to river and continue canoe safari. Overnight Nyanatusi Island.

Day Nine: June 20 Canoe safari. Overnight G. Camp Island. Final preparations and information session in preparation for eclipse.

Day Ten: June 21 Eclipse Day!!! To centerline by 10:00 a.m. Eclipse at approx. 1:12 p.m. Prepare to be dazzled! Overnight at Chewore camp.

Day Eleven: June 22 Canoe safari through Mapta Gorge. Overnight at camp at the end of the gorge.

Day Twelve: June 23 Arrive Kanyemba.

Day Thirteen: June 24 Transport to Kariba. Optional flight to Victoria Falls.

Tour Price: Kariba to Kanyemba and return (Thirteen days/twelve nights) \$1500 USD

Individual safaris within the path of totality are also available.

a) Chirundu to Mana Pools: June 20-23 \$500 USD (four days/three nights)

b) Mana Pools to Kanyemba: June 19-24 \$750 USD (six days/five nights)

c) Mana Pools land safari: June 19-22 \$650 USD (four days/3 nights)

Note: Of these three options, only the Mana Pools to Kanyemba safari will be at the center line on eclipse day.

#### Inclusions

- \* All ground transportation and transfers as per itinerary
- \* Safari camps on a twin share basis
- \* All camping gear
- \* All meals, drinking water, soft drinks and wine
- \* Professional, well-trained guides with extensive knowledge of wildlife and local area
- \* Daily game activities (walking safaris, canoe safaris, game drives)
- \* All park and reserve fees
- \* Complete safari tour information package
- \* Complete eclipse information package and instruction including eclipse viewing eye protection

#### Exclusions

- \* Items of a personal nature
- \* Accommodations Harare and Kariba
- \* Transfers between Harare and Kariba
- \* Gratuities to local camp staff
- \* Optional tours and/or flights to/from Harare and Victoria falls

For further information contact: CANWEST TRAVEL TSORO SAFARIS Ph. (403) 340-8802 Ph. 011-263-61-2925  
 Fax: (403) 309-3499 Fax: 011-263-61-2426 Call toll-free 1- 800-565-8598 Email: canwest.travel@home.com Email:  
 tsoro@zol.co.zw www.envirotours.com/canwest www.tsoro.co.zw

From: FRED ESPENAK <u32fe@lepvax.gsfc.nasa.gov> To: <SOLARECLIPSES@AULA.COM> Cc: <khand@stanford.edu> Sent: Monday, February 12, 2001 8:01 PM Subject: [SE] **'Under African Skies'**

Kevin Hand is a graduate student (Stanford University) who is organizing a program called 'Under African Skies' eclipse conference and education expedition. It has the potential to reach thousands of students in Africa and the US.

Here is the primary web site: <http://www.cosmoseducation.org> Additional information is at <http://www.africaneclipse.org> If you go to <http://www.cosmoseducation.org/download/download.html> you will see links to 2 pdf files that contain all the details (1 full proposal and 1 executive summary)

If you are interested in more details or have ideas for funding this worthwhile eclipse outreach project, please contact Kevin via phone (415-377-90530 or email (khand@stanford.edu). - Fred Espenak

From: Glenn Schneider <gschneider@mac.com> To: <SOLARECLIPSES@AULA.COM> Sent: Wednesday, February 28, 2001 4:51 PM Subject: [SE] **UMBGRAPHILE S/W soon to be re-released (update)**

I am about to re-release the UMBGRAPHILE S/W for the upcoming eclipse, following it's initial earlier alpha-release, updates, and testing. I should have it posted on my UMBGRAPHILE page this weekend. If anyone has any other suggestions, which I might be able to address in the short term, please let me know. I will probably have time for another update sufficiently ahead of the eclipse, but I would like to "freeze" it soon unless anyone discovers any show stoppers.

The UMBGRAPHILE page: <http://balder.prohosting.com/stouch/UMBGRAPHILE.html> Thanks, Glenn Schneider

From: Glenn Schneider <gschneider@mac.com> To: <SOLARECLIPSES@AULA.COM> Sent: Wednesday, February 28, 2001 4:44 PM Subject: [SE] **Query: Shipping agent in Lusaka**

I would like to pre-ship some equipment to Zambia (Lusaka) for the eclipse; likely 2 crates total mass about 70 kg. Could anyone recommend a reliable bonded shipping agent in Lusaka who could receive this (and take care of whatever temporary import/customs procedures need to be handled) and hold it for me until I arrive to pick it up? I have found a couple of possibilities by searching on the Internet, but a first-hand recommendation would be most comforting.

Thanks, Glenn Schneider

From: F.Podmore <podmore@science.uz.ac.zw> To: <solareclipses@aula.com> Sent: Monday, February 12, 2001 3:40 PM Subject: [SE] **ZAMBIAN ECLIPSE LAUNCH this Saturday**

I have just had an email from Peter Kalebwe (in Zambia, at pkalebwe@impala.unza.zm) saying the ECLIPSE LAUNCH of all their programmes is this Saturday 17 February. Well done the Zambian eclipse committee (:)) I wish I could be there.... Francis Podmore

From: Nello Soldà <n.solda@eclipse2001.it> To: <SOLARECLIPSES@AULA.COM> Sent: Thursday, February 15, 2001 2:03 PM Subject: [SE] **GSM**

Can I know if Angola, Madagascar, Malawi, Mozambique, Zambia and Zimbabwe are furnished of a GSM network? Thank you very much.

From: Peter Tiedt <Peter.Tiedt@npc-eagle.co.za> Zimbabwe and South Africa are. SA has very good coverage.

Zimbabwe as far as I know only has coverage in towns and cities.

I am not aware of any significant coverage for Zambia apart from the major cities.

Angola - No  
Mozambique - No

Malawi - ?  
Madagascar - ? (although Tana may have.

From: Apáti Nagy Gábor <angabi@elender.hu>

Hi, See: <http://www.vodafone-roaming.co.uk/>

From: Harvey Wasserman To: SOLARECLIPSES@AULA.COM Sent: Saturday, February 10, 2001 10:54 PM Subject: [SE] Fw:

**Eclipse viewers for Zambia....**

Being a member of the solipse mail list, I received the following and thought it might be of interest... Harvey Wasserman

Original Message ----- From: charly dolman To: charly@solipse.com Sent: Saturday, February 10, 2001 11:15 AM Subject: Eclipse viewers for Zambia....

To Everybody on the Solipse Mailing List.....

We are extremely happy to announce that a company in the United States has offered us a special price on 40,000 Eclipse Viewers or more. Last year we paid for the same Viewers, from a company in the U.K. for 20p (40 cents or 60 pfenig)

We have secured a special price from a manufacturer in the United States of only 12 cents. Which is 6p or 24 pfenig.

We are currently looking for a person OR persons who would like to support this cause so that we are able to give away these 40,000+ Eclipse Viewers for ABSOLUTELY FREE to the local people living on the center line in Zambia.

On my last trip to Zambia, I have met business men that are selling these viewers for 80 cents. The average income in Zambia is 1 Dollar a day.

The local people cannot afford these Viewers and therefore risk serious health and blindness to their eyes if looking directly at a Solar Eclipse.

These Viewers are US government and E.U. certified and are made from Polymer and Mylar mix to provide the best possible safety.

If someone acts fast, they could also get there Logo (if wanted) onto the Shades.

The total cost for 40,000 Viewers is: \$4,800 US. It is our goal and wish to have 80,000 viewers available to be given away.

If you want to HELP and CONTRIBUTE:

1- please fax us your credit card details along with your signature and the amount you want to give to: Fishnut Productions: +49-30-440-56263

or

2- Or you can deposit the amount (US Dollars, British Pounds or German Marks, by bank transfer to: Our company Name, Address and Phone Number: Fishnut Productions Berlin, Germany 10119 Phone/fax: +49(0)30-440-56263 Attention: William Miller

Bank name: Dresdner Bank Bank Address: Gustaf Adolph Strasse 1 Berlin, Germany 13086 Account number: 4764 2374 00 Bank Number or code: 120 800 00

Please state that it is a: " Donation for Eclipse Viewers "

We need reliable, hard working helpers. If you would like to Volunteer for any of the following areas, then please email those persons involved.

Volunteer means that you work for free and you must have a valid festival ticket but would be reimbursed the ticket after the fes-

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tival.

You could quite possibly, earn a bit of cash for your time after the festival.

Technicians and stage help: sound, light, etc....

Baby sitting and children's area

Catering

Bar

Security/Public relations

Medical

Sanitation/Garbage

Driving/ with or without own car

we look forward to and hope for some great support ! peace.

If you want to be removed from the Solipse mailing list, or have recieved this Mail in error, please reply to charly@solipse.com?subject=unsubscribe and we will take you off the list. Thank you.

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

This sounds like a worthy project, one to which I'd be willing to make a contribution, but have you checked it out to make sure it is not a fraud? I'm tired of being cynical, but things like this must be investigated before we jump on their bandwagon.... Jim Huddle

From: Harvey Wasserman <onsite@gate.net>

I am open to suggestions as to how to check up on them. I have heard from a few independent sources that the solipse festival is real, at least. Last week I was in Tucson and met a couple that seemed to have intimate knowledge of the festival. They said that their friend in Germany is involved with the planning of it.

I have also "spoken" with a couple of people on the alt.travel.africa newsgroup that also knows of them. I got the email via the mail list that I subscribed to at their website <http://www.solipse.com>.

Of course none of this confirms that the money will go where they say it will.

I too am tired of being cynical, yet also understand why we need to be at such times. OTOH, I feel that sometimes we must go with our gut instinct and do what our hearts tell us to do. JMHO.

I have also written to Thousand Oaks Optical, asking that they donate 500 viewers to me. If they agree, I will distribute them to kids across southern Africa as I travel, and to whomver else is obviously too poor to afford them. Just seems like a shame that those that have so little to start with might be burdened with a burn on the retina, on top of everything else. Sorry, I know I am preaching to the choir, so to speak....

So, if you feel uneasy about giving cash to the solipse festival, I would be very happy to receive any viewers anybody has, and will take them with me and distribute them as above. Or perhaps as a group, we might each wish to commit to doing this on our own.

Just a thought. Harvey Wasserman

PS. Sorry about the previous HTML in the email. I thought it was turned off. It is now.

From: Mark S. Margolis <rainbowsymphony@rainbowsymphony.com>

In addition to the Eclipse Shades we will be donating for free for Africa Eclipse 2001, we were approached by Solips and a price was established for the quantity of inexpensive viewers they are refering to which we agreed to produce. They are looking for

*(Continued on page 50)*

monetary donations. My feeling after speaking with the organizers is that that seem to be on the up and up. They have a very cool "flash enhanced" website and I think they are into putting on a successful event. Best regards, Mark s. Margolis Rainbow Symphony, Inc.

From: Mark S. Margolis <rainbowsymphony@rainbowsymphony.com>

As a suggestion, the sponsors of the project could order the viewers directly and donate them to Solipse...takes the question of "where the money goes" out of it! Mark

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

For that matter, you can bring extras with you and hand them out to people you meet. I find it is a good way to make friends. Jim Huddle



From: Carton, WHC <Wil.Carton@corusgroup.com> To: <SolarEclipses@Aula.com> Sent: Wednesday, February 21, 2001 4:34 PM Subject: [SE]

### Forewarned is forearmed

Eclipse fans, A colleague of mine returned last week from a month journey, crossing South-Africa, Zambia, Zimbabwe and Mozambique. He investigated the safety to visit the eclipse of 21 June for eight coworkers of our enterprise, crossing those countries a hired car and by tent. His judge: only South-Africa has a low risk, but that is outside the eclipse totality belt. In the countries where the eclipse totality belt pass through, it is not safe to sleep outside a protected area (hotel, lodge) nor to drive with only half a dozen people in one vehicle. So our group trip, planned shortly after our 1999 August 11 experience, has now been cancelled, because the danger to be assaulted and robbed is substantial. Forewarned is forearmed. Wil Carton.

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

Wil, I'm sorry that your trip has been cancelled.

I agree that it is unsafe for small groups of tourists to roam around these countries unescorted. And the danger is not just assault and robbery, but wild animals that kill people, too.

But I've been to both Zimbabwe and Zambia in the past year, and I found that WITH QUALIFIED AND KNOWLEDGEABLE ESCORTS, the danger is minimal. The key is getting good local guides to keep you out of harm's way. I think the same can be said for most countries in the area, except maybe for Angola. I don't know about non-Americans, but my source at the State Department says that Americans should avoid Angola altogether.

There are still several escorted tours that have vacancies in Zimbabwe and in Zambia; I hope you can hook up with one. Best regards, Jim Huddle

From: Scott <hdemann@yahoo.com>

What is it that is so dangerous about these countries? I, for one, am not worried. I plan to travel around Zambia by foot/bus and camp in a tent. I would think that a less developed country such as Zambia is much safer than the typical western city with its maniac drivers and gun-wielding criminals. H. DeMann USA

From: Jeff Batten <jeff.batten@csun.edu>

If you think Zambia is such a wonderful country, then check out

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<http://www.dfat.gov.au/zw-cgi/view/Advice/Zambia>  
[http://www.state.gov/www/global/human\\_rights/1999\\_hrp\\_report/zambia.html](http://www.state.gov/www/global/human_rights/1999_hrp_report/zambia.html)  
<http://www.hrw.org/hrw/worldreport99/africa/zambia.html>

<http://www.travel.state.gov/zambia.html>  
<http://www.unhcr.ch/world/afri/zambia.htm>  
<http://allafrica.com/stories/200101040116.html>  
[http://www.state.gov/www/global/human\\_rights/1999\\_hrp\\_report/zambia.html](http://www.state.gov/www/global/human_rights/1999_hrp_report/zambia.html)

Jeff Batten

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

>What is it that is so dangerous about these countries? I, for one, am not worried.

Yes, but there aren't recent reports of campers in western cities being EATEN by animals.

These are a few of the reports from the last year. There are many more.

<http://allafrica.com/stories/199808050141.html>  
<http://www.telegraph.co.uk:80/et?ac=000133745949937&rtmo=qxqsuRx9&atmo=9999999&pg=/et/00/12/13/wbul13.html#go6>  
<http://www.telegraph.co.uk:80/et?ac=000133745949937&rtmo=gjk7Zflu&atmo=9999999&pg=/et/00/11/13/wbul13.html#go5>

Lest we forget the 11 year-old Baltimore boy EATEN on Safari in August 2000, at the same camp a driver was attacked at night by an alligator in November. <http://www.sabc.co.za/units/chanafr/news/000810.html>

Take precautions, be AWARE and be CAREFULL.  
 jen

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

A word from closer to the action. All the countries (with the exception of Angola - where i am not qualified to make a comment) are pretty safe.

All you need is common sense, and to stay alert. Don't allow yourself to get into a possibly dangerous situation, just as you would in the Red Light District of any European city, the Bronx or any of a dozen other locations worldwide. Peter Tiedt

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

Hi Scott and anyone else who is considering the

same foolish actions.

Camping in a so called "empty" country in a light tent could mean the tent being visited at night by lion or some other wild "nasty."

You could also run out of water and would be well advised not to drink from the local stream, river or water-hole which could easily be infected with bilharzia or cholera. Even a few monkeys will steal your rucksack and open it to find anything to eat. Other more advanced predators (humans?) will be happy to beat your brains out with a large iron bar if they think you have more than \$5.00 on you. I assure you there will be no clean water running from pipes. How well do you get on with crocodiles?

Admittedly, if you need a doctor, there may be one within 300 or 400 miles - if you can walk that far!

All these places are perfectly safe, so long as you stick to being in a reasonable sized party and do as you are told by an experienced guide. If one vehicle breaks down, there will be others to back up. Mobile phones usually have no coverage, so radios are better - but take a GPS so you know where you are and can inform helpers if necessary. It is all very easy so long as you have seen a little of Africa before and are aware of the numerous possible problems. When did you last fix a flat tyre? I mean FIX it, not take it somewhere to be fixed. How do you lift the vehicle up to change the wheel when it is sitting in six inches of soft mud? Are you beginning to get the idea of why someone with experience is needed? All the easy jobs at home take on a very different appearance when stuck in the bush 150 miles from nowhere. What if your vehicle runs a big-end bearing (on the crankshaft). or even just the fanbelt snaps and you haven't got a spare? Can you fix them?

It really is not so simple as you might think. Cliff Turk

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

I think we are getting off topic here. The issue is not whether these countries are wonderful, humanitarian democracies, but whether the risk of placing one's self in a particular place is worth the known, inherent risks associated with it for the opportunity to see a TSE. I'm not going to

Jim Huddle and others (including Fred Espenak) have commented on their recent trips to the area. Based on their comments and those of others I am satisfied that the reward is worth the risk. I accept that something bad - even tragic - may happen. That's life. I took those

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same risks in Turkey and in western Venezuela (In Caracas, for example, the night clerk at our hotel was quite adamant: don't go outdoors after 9 p.m. We didn't).

The focus should be on common sense. I will be traveling with a large group and will certainly follow safety and security instructions to the letter. Beyond that, que sera.

I won't try to dissuade those who elect to take greater risks. They are making informed decisions and that is their right. In Turkey, some individuals traveled alone deep into eastern Kurdish held areas. They survived. And perhaps with a greater reward. Clear skies! madden/rochester

From: Archer Sully <archer@meer.net>

The problem is that American tourists are notoriously lacking in common sense. Archer Sully

From: Michael Simmons <msimm@ucla.edu>

In 1994 I climbed a remote mountain in the Andes in Bolivia in the eclipse path. We had an experienced climber who spends six months each year in South America leading the expedition. It was about 110 miles from La Paz to base camp and it took about 10 hours to get there. It was much longer getting back because it had rained. The international highway we took was an unbelievably bad dirt road crossing the Andes into Chile. The old bus broke down a few times and when it did Bolivians who had been just sitting or sharing driving would jump up and start grabbing tools and spare parts from various areas on the bus. It broke an axle or something (I don't remember what) on the way back and the wheel couldn't be removed. They got the bus off the ground and got the wheel and brakes and whatever else they had to off the bus in one piece. They had the parts to repair it and we were back on the road in 90 minutes. Along with tools and parts, they had an enormous amount of ability and resourcefulness. That is more common in the third world where they don't throw things away when they break or wear a bit. I wouldn't trust myself to prepare for that trip, though. While I was doing this my wife traveled into the Amazon alone but had experienced and recommended guides with her at all times, even in the towns.

Most people thought we were crazy to go to Iran in 1999 but it turned out to be one of the best experiences of our lives. In fact, everything was so great I let my guard down near the end of the trip and had a

bag stolen from under my arm by a typical pro motorcycle snatch and grab. I was carrying it under the arm towards the street and didn't have a strap around me, something I would never do in my own local big city of Los Angeles or any other large western city (especially one where I stand out as a tourist so much). But I never feared for my life like I would in some areas of LA despite most people saying that we would be killed or taken hostage. I listened to other Americans who had been there and knew what to expect.

I agree that the dangers of unfamiliar areas are frequently over-hyped by many and I go ahead and do what I want to when it appears it can be safe. It's important to know the difference between a place where only common sense is needed and one where much more caution is essential. How many people will be going to Angola for the eclipse? Mike Simmons

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

For one thing, there are predators (lions, etc) that kill humans. These animals are opportunistic in the sense that if they see an easy meal, they will take it. Also, there are human predators that are opportunistic in the sense that if they see an easy way to acquire money, they will take it. Jim Huddle

From: Mike Simmons <msimm@ucla.edu>

I live in hills where there is a lot of wildlife. As an avid birder and wildlife lover that's great for me. But when I go running on isolated trails I'm always aware that there are mountain lions around. I haven't even seen the tracks of one yet and there are no recent reports of them but I know they could be there. I don't run after dark any more. It's taken some getting used to the idea there is potential danger in this lovely place. We all tend to ignore the unlikely possibilities until confronted with them.

It's a bit disconcerting when you realize you're not at the top of the food chain. Mike Simmons

From: Harvey Wasserman <onsite@gate.net>

Yes, this is about the only argument that I have seen in this thread that seems to me to have any validity. I camped in Katmai, Alaska, among the bears that gather each year for the salmon running in the river. It does indeed require a different mindset to travel where man is not the top of the food chain. As a result, proper precautions are exercised, ie. don't travel in game areas without a guide, or walk at night where lions may be, etc. Listen to others and play conservative, for sure,

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but keep it all in perspective also.

As for the human predators, others have said it better than me - they exist everywhere! JMHO Harvey Wasserman

From: Patrick Poitevin <patrick\_poitevin@hotmail.com>

Dear All, Every year, better every eclipse, there are lots of messages about danger in certain countries. Probably next year the danger of overriding kangaroos in Australia, or in 2003 hit by a Scottish bagpipe, or eaten by a Penguin for the total in November ...

Please keep those messages solar eclipse related. Most of non solar eclipse related messages keep on and on and become quite personal.

Thank you all for your understanding and ... keep those solar eclipse related messages coming!  
Best regards, Patrick alias Dr. Evil

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From: Michel-André Levy <malevy@sinopia.fr> To: <SOLARECLIPSES@AULA.COM> Sent: Friday, February 23, 2001 Subject: [SE]

### Whom do you find in Madagascar during eclipse time ?

I may be wrong, but I have the impression that no one from this list will go to Madagascar for this TSE. Is that true ? In that case, what is the reason why ? Michel LEVY

From: Vic & Jen Winter, ICSTARS Inc.

That is not true. Some of us have selected Madagascar over mainland Africa. Our reasons had to do with personal interest in the island, a sliver of a better weather percentile on Jay's charts, the decreased risk factors of politics, predatory animals and disease - and last but not least... the possibility of Green Flash from a partially eclipsed setting Sun. IC-

STARS Astronomy -

From: Brian Seales <brianseales@eircom.net>

Hi Michel, A group of 14 mad Irishmen and Irishwomen are travelling to Madagascar for the eclipse along with it appears at least 3,000 others according to the Madagascar authorities. ( They actually said 30,000 but I think that may be a mistake----) We are going for 3 weeks and plan to see as much of the southern half of the country as the conditions will allow. I spoke to Jay Anderson at the Solar Eclipse conference in Antwerp last year and he is going as well. There are also some English tour groups travelling. All in all we plan to have a great time there no matter what happens. Regards to all, Brian Seales

From: Stig Linander <linander@worldonline.dk>

Sounds interesting. Could someone please explain that phenomenon in details? TIA. Best regards, Stig.

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

Green Flash is the atmospheric phenomenon often viewed just as the sun sets over a large, western body of water.

The basic principle is that because red light has a longer wave-length, it bends the least in the atmosphere. Blue bends the most. As the sun sets, red colors which don't bend in the atmosphere remain straight, failing to wrap around in earth's atmosphere and dis-

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appear from view faster than others. This makes the last colors to remain green and then blue. However, blue light is dispersed quickly in the atmosphere, scattered by molecules. This leaves the last visible setting "flash" a green one.

There is also another interesting notching effect that occurs during the process caused by atmospheric layering. Some people describe the notching as 'horns' in the shape of the setting sun. - Sounds like an interesting effect to mix with a partially eclipsed sun to me! jen

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

more go on continent, mainly Zim and Zam, because:

- longer duration of totality
- less risk of clouds
- easier accessibility (Lusaka)
- combine with safari
- french language vs. english ?
- Air France flies to Madagascar, I suppose. But they are notorious for being on strike occasionnally :-)

From: Sheridan Williams <sheridan@clock-tower.com>

I booked Madagascar with 6 friends some time ago. I've always known it was the best location for several reasons. Sheridan Williams

From: Sheridan Williams <sheridan@clock-tower.com>

> Olivier Staiger says most will choose mainland for the following reasons:

- >-longer duration of totality  
Yes, but lower altitude eclipses are far more interesting (aesthetically and photographically)
- >-less risk of clouds  
Wrong, the west of Madagascar has better prospects than anywhere other than Angola.
- >-combine with safari  
What's wrong with Madagascar's superb wildlife and scenery?

*(Continued on page 55)*

From: <Kidinvs@aol.com> To:  
<SOLARECLIPSES@aula.com> Sent: Thursday,  
February 08, 2001 10:04 PM Subject: [SE]  
**Zambia eclipse.....**

I will soon be relinquishing whatever small amount of space I have remaining for the eclipse trip I have planned. Information is available at [www.eclipsesafaris.com](http://www.eclipsesafaris.com)

If any one has interest in Air Only, or simply accommodations in Zambia at the Tented Village, or the whole tour, let me know soon. For those that are traveling with a different group, best of luck... I am sure we will meet up somewhere.  
Eric Brown

From: Glenn Schneider <gschneider@mac.com> To:  
<SOLARECLIPSES@AULA.COM> Sent: Wednesday,  
February 28, 2001 4:51 PM Subject: [SE]  
**UMBGRAPHILE S/W soon to be re-released (update)**

I am about to re-release the UMBGRAPHILE S/W for the upcoming eclipse, following it's initial earlier alpha-release, updates, and testing. I should have it posted on my UMBGRAPHILE page this weekend. If anyone has any other suggestions, which I might be able to address in the short term, please let me know. I will probably have time for another update sufficiently ahead of the eclipse, but I would like to "freeze" it soon unless anyone discovers any show stoppers.

The UMBGRAPHILE page: <http://balder.prohosting.com/stouch/UMBGRAPHILE.html> Thanks, Glenn Schneider

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>-french language vs. english ?

What's the problem here? Many tour groups will have a French speaker.

>-Air France flies to Madagascar, I suppose. But they are notorious for being on strike occasionally :-( I agree that no-one in their right mind travels Air France because of the French attitude to strikes, but Virgin, British Airways all fly to Jo'burg and you can easily get there after that. Back to you Sheridan

From: Stig Linander <linander@worldonline.dk>

In a reply to Michel-André Levy, Olivier Staiger made a list of reasons why \*he\* prefer 'Zam' and 'Zim' for 'Mad'.

I could make a similar list of reasons why \*I\* prefer 'Mad' for 'Zam' or 'Zim'.

But it's \*not\* very interesting. All countries have their pros and cons. Some have been discussed on this list, some haven't. Even eclipse chasers are not all alike, so we weight these pros and cons differently.

The way Olivier weighted the pros and cons, he decided to go to 'Zam' or 'Zim'.

The way I weighted the pros and cons, I decided to go to 'Mad'.

I'll just hope that no matter where we go, we'll all get the experience we're looking forward to. Best regards and clear skies, Stig.

PS. Thanks to Jen Winter for the explanation of the green flash. But I suppose one has to be on the west coast to see it.

From: Marc Weihrauch <marc.weihrauch@student.uni-halle.de>

Hello Stig, Probably. But isn't that the place to be for the eclipse, anyway? The lee side of the island? Best regards Marc

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

a picture tells a thousand oaks ...errr.. words ! :- ) go to [http://antwrp.gsfc.nasa.gov/cgi-bin/apod/apod\\_search](http://antwrp.gsfc.nasa.gov/cgi-bin/apod/apod_search) , type in the words Green Flash and hit your enter key. You'll find , among others, a great photo of the green flash taken by spanish astrophotographer Juan Carlos Casado (a member of this list ) HOWEVER ... I don't mean to be a party booper, but I doubt that you will see the green flash on June 21. The green flash always appears on the top edge of the Sun , but on June 21 the sunset partial eclipse is AFTER totality, thus the upper part of the sun is hidden by the Moon. You will have a sunset partial

eclipse that will resemble the one Fred Espenak has seen last July 30 . Well, depending on your location, the Moon may be on the upper right of the Sun, and maybe the top of the Sun will just be visible ? In February 1999 I saw the green flash at sunset from Perth Australia. Magnificent.

From: Mike Simmons <msimm@ucla.edu>

You don't necessarily have to be watching the Sun set over the ocean to see the green flash. It's best because the lower the altitude of the Sun when it "sets" the more likely you are to see it but the green flash can be seen as the Sun sets behind any object at low altitude. I have seen a persistent green "flash" in a solar telescope -- 12 inch triplet lens, f/150, projected image about 17 inches in diameter -- for a few minutes as it set behind distant mountains. I forget the highest altitude of the Sun at which the green flash has been observed -- perhaps 10 degrees? IOW, you need a low horizon. The ocean has that, of course. You also want clean, clear air towards the horizon. Mike Simmons

(Continued on page 56)



From: Mike Simmons <msimm@ucla.edu>

I think you can just as easily see the green flash from the highest visible edge of the Sun. The "top" edge causes the green flash but not because there is a difference between the top and middle of the Sun itself or the Sun's visible image but because of the Earth's atmosphere and how it affects the light. Once the light is cut off sharply, that "edge" will work the same. I would absolutely watch for it if the conditions are good. And if I were in Madagascar. :-)

BTW, the green flash has been observed from setting Venus -- reflected sunlight -- though it is very rare to see it. Mike Simmons

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

This URL links to a page listing two entries, one dated 2000 May 7, the other dated September 9, 1997, both credited to the same photographer. I downloaded both image files, and it is hard to believe they are from two different exposures, three years apart, though the files differ slightly in size. The apparent duplication probably results from some mix-up by the keeper of the WebPages. Gerry K8EF

From: <JohnLX200@aol.com>

Add Mercury to that list. Quite amazingly, I saw it from an airplane just under 3 years ago returning from Aruba, and you know why I was there! See, almost on topic ;-)

Mercury disappeared at 7:37pm (Eastern or Aruba time, I forget...probably on 2/27, think it was a Saturday, would have to check my itinerary for exact date) from an American Airlines flight, probably east of the Carolinas. Unfortunately AA didn't allow GPS use, and my GPS at the time didn't handle high speed anyway.

I observed through 7x21 binoculars (maybe with one eye) and managed to follow it well below horizontal to very near the depressed horizon. It pretty well went through the colors of the rainbow before severely dimming and fading in and out due to seeing, including a definite green phase. So not quite what you'd think of as a flash, but I'd say it qualifies. John Hopper

From: Stig Linander <linander@worldonline.dk>

Which place is best depend on how you weight the pros and cons.

I plan to view the eclipse from the Haut Plateau. The southern part of the Haut Plateau is sub-desert with better chance of a clear sky. Best regards and clear skies, Stig.

PS. Thanks to Olivier Staiger for the green flash photo URL.

From: Paul & Ellen <to.ln@bigfoot.com>

Hello, There are more people going to Madagascar. I'm going there to together with Paul van Oirschot and Roland Gadyne. We've booked a jeep and driver/cook/guide and are planning to go to the area of Morombe (were else!). I expect it will be crowded there. After the eclipse we've planned to see the country itself. It was difficult to get a flight to Madagascar but finally we managed to get one via Johannesburg. Air France has increased the air fare with 50 % for june.

I know there is at least one dutch travel agency that arranges an eclipse trip. But they've planned there observation site further land inward. It will be a group of none astronomers I believe. An other travel agency has dropped the june trip they normally do due to the eclipse. They don't want to be there at that time, too busy they say. Weird ain't it? Ellen Bruijns



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From: Jörg Schoppmeyer <schoppy@kwsoft.de> To: 'Solareclipses <solareclipses@Aula.com> Sent: Friday, February 23, 2001 10:26 AM Subject: [SE]

**Whom do you find in which place in Zambia during eclipse time ?**

Hi, maybe we can make a list of people who will be in Zambia during the eclipse time. I will be in Lusaka from 18th to 23th in the Pamodzi Hotel. Is there somebody else from this list in that area during this time ? Joerg

From: <timo.karhula@se.abb.com>

Hi, I will be in Zambia from about 19th to 22th of June. Me and two groups of about 15 people each will travel with Sandveld Tours so we will camp in tents all the way from Cape Town from May 29 onwards. We will be 40 km N of Lusaka on E-day. Timo Karhula

From: Harvey Wasserman <onsite@gate.net>

We are arriving on the 24th and leaving on the 26th. At least that is the current plan. We will be staying at the Solipse. The only sure plan is that there is no sure plan. Harvey Wasserman

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

I'll be in Zambia from June 7 to 28 with an expedition of 14. We'll spend most of the time outside of Lusaka but will stay there e.g. the night of June 22 to 23. Which brings me to an idea: What about having a post-eclipse party on that night, somewhere in Lusaka? By the evening of the 22nd most groups should either still be there or have just returned from elsewhere. After the 1999 annular eclipse in Western Australia, Fred Espenak had organized a party in Geraldton, with quite a number of observers attending (some of which hadn't met for a decade). Given the vastness of Africa, why not come together at least on one spot at one time? Any suggestions of a nice place, anyone? Daniel

From: Marc Weihrauch <marc.weihrauch@student.uni-halle.de>

>Hello Harvey, We are arriving on the 24th and leaving on the 26th. At least that is the current plan. We will be staying at the Solipse.

That's not both June, is it? June 24th is three days AFTER the event. I'll be in Africa from June 8th to June 25th, travelling Namibia, Botsuana and at last Zambia to observe the eclipse from some place West of Lusaka. Our group is organized by Sandveld, too, and consists of 23 people. We want to avoid any festivals. I'm hoping to meet some of you down there. Good luck this summer! Marc

From: Alyn Kelley <alyn@well.com>

A friend and I will be in Zambia from the 16th to the 23rd or so. It would be nice if there were larger groups we could hook up with on eclipse day, since both he and I are eclipse newbies. Alyn Kelley, USA

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

This is a good idea. I would love to meet as many of you as possible. Can we get some places and dates of availability? Or organize something? madden/rochester

From: Harvey Wasserman <onsite@gate.net>

Hmm.. Don't know what happened there... The correct info: We are arriving Lusaka on the 20th and departing on the 22nd. Maybe I was looking at the wrong month???? We are arriving in Windhoek on the 8th and departing on the 26th! Also traveling to Namibia, Botswana, Zimbabwe, and Zambia. Hmm.... Harvey Wasserman

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

I'll be at the Intercontinental hotel June 15-21 (leaving 22 in morning). I am currently talking to guys in Zim to participate in a multi-place live webcast. Olivier "Klipsi" Staiger

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

>What about having a post-eclipse party on that night, somewhere in Lusaka? By the evening of the 22nd most groups should either still be there or have just returned from elsewhere. After the 1999 annular eclipse in Western Australia, Fred Espenak had organized a party in Geraldton, with quite a number of observers attending (some of which hadn't met for a decade).

yes, that was a great party, meeting all these fine people. It was "only" for an annular eclipse. But there was a special sense about it: we knew it had been the last annular of the 2nd millenium. We were quite happy having seen it. What a short one!

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>Given the vastness of Africa, why not come together at least on one spot at one time? Any suggestions of a nice place, anyone?

Well, I am leaving 22nd in the morning. So if you guys have a dinner on 22nd, I won't be joining you. On the other hand, whoever from this list shows up at the bar of the Intercontinental Hotel in Lusaka on 21st June evening will get a free beer, courtesy of Klipsi.

From: Mike Murphy <evmurph@zetnet.co.uk>

Hi Joerg, We'll be in Zambia and have tickets for the Solipse festival which is probably where we'll be on those dates - no firm plans as yet. Just out of interest, how much per night is the Pamodzi Hotel? The Lonely Planet guide says US\$130/150 per night. - Mike in the UK

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From: F.Podmore <podmore@science.uz.ac.zw> Sent: Friday, February 09, 2001 2:37 PM Subject:  
Re: **Problems to contact P. Kalebwe**

Hello Herbert, I am very sorry you are having trouble contacting Peter K - I don't know what the difficulty might be - could be sheer busyness, or email system breakdown.... And I apologise for the delay in this reply - I have been in England. If you have made contact with him, then please let me know.

HOWEVER I have recently been checking Klipsi's website for 21 June (<http://eclipse.span.ch/tse2001.htm>) and he has a good number of very useful-looking LINKS to ZAMBIAN WEBSITES, including the UNIVERSITY OF ZAMBIA. I think Peter works in the Department of Physics, under the School of Natural Sciences.

I cannot get very far in the UNZA website ([www.unza.zm](http://www.unza.zm)) as the connection is extremely slow, but I Hope you can find phone/fax/alternative email addresses (e.g. for his Head of Department or Dept secretary) there.

If not, our university library may have their prospectus - but it's been raining here, very hard, so I don't want to go there right now.

Peter has a colleague, Mr Evans LAMPI, also at the University of Zambia - you could email him : [elampi@yahoo.com](mailto:elampi@yahoo.com) OR [elampi@natsci.unza.zm](mailto:elampi@natsci.unza.zm)

ZAMBIA ECLIPSE WEBSITE I see there is now a much better Zambia eclipse website at [www.eclipse.com.zm](http://www.eclipse.com.zm) I hope that helps. Regards, Francis

From: <Jay.M.Pasachoff@williams.edu>

Peter Kalebwe has gone to South Africa this week for six months, and will be back in Lusaka only for a week at the time of the eclipse. I am not sure yet how we will manage without him, though he has left some infrastructure in place. I am trying to arrange to go to Lusaka for a week in mid-March to check on various things.

Peter has the opportunity to be at a program at the South African Astronomical Observatory that was most unfortunately delayed from last year. Jay Pasachoff as Chair of the Working Group on Eclipses of the International Astronomical Union [jay.m.pasachoff@williams.edu](mailto:jay.m.pasachoff@williams.edu)

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

>HOWEVER I have recently been checking Klipsi's website for 21 June (<http://eclipse.span.ch/tse2001.htm>) yo, its actually <http://eclipse.span.ch/2001tse.htm> thanks Klipsi

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

I just got the message below - it gives another email address, presumably for the Zambia eclipse committee. Good luck! Francis

Date: Wed, 14 Feb 2001 13:31:23 +0000 From: [pkalebwe@impala.unza.zm](mailto:pkalebwe@impala.unza.zm) > To: [podmore@compcentre.uz.ac.zw](mailto:podmore@compcentre.uz.ac.zw) Subject: UPDATE

Francis, Definately, you can't use my present address since I will be away till August but will come for two weeks in June to witness the event. I am leaving tomorrow the 15th of Feb. 2001. To find out more, use the Secretariat office e-mail i.e. [eclipse2001@coppernet.zm](mailto:eclipse2001@coppernet.zm)

It is good you have a lot more people coming into the eclipse effort in Zimbabwe. Regards Peter

From: Stephen McCann ITN <stephen.mccann@roke.co.uk>

... and that email address also 'leads' to the following web site : <http://www.eclipse.com.zm/frameset.htm> via <http://www.coppernet.zm/> which I don't recall been mentioned before. Thanks Stephen McCann



Joanne & Patrick

*Solar Eclipse Mailing List*



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



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**Solar eclipse newsletter February 2001 Now Online!!!!!!**

From: FRED ESPENAK <u32fe@lepvox.gsfc.nasa.gov> To: <SOLARECLIPSES@AULA.COM>; <eclipse@hydra.carleton.ca> Sent: Tuesday, February 27, 2001 5:10 PM Subject: [SE] SENL February 2001 NOW ONLINE!

Patrick and Joanne are have prepared a new issue of the SENL (Solar Eclipse Newsletter). The February 2001 issue is now online in pdf format on the SENL index page of MrEclipse.com:

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

I especially like the new February layout which has one or two columns per page. It's much easier to read.

The August 2000 issue is also a new addition online although it is in the old (none graphics) format.

Other recent issues currently online 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\*)

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 Patrick and Joanne! - Fred Espenak

From: Patrick Poitevin <patrick\_poitevin@hotmail.com>

Please note, credit for issuing the Solar Eclipse Newsletter goes completely to Joanne. She is doing a wonderful job. When I read the newsletter, she surprises me every time. She is doing a wonderful job and I am very grateful she took the task of editing the SENL.

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

