

VollieNews

NEWSLETTER OF THE POVG-THE PERTH OBSERVATORY VOLUNTEERS' GROUP INC.

Venus transit bogs down servers



An unprecedented load on internet servers from people wanting to watch webcasts of the transit of Venus yesterday caught web managers unawares, some having to bring on board new supercomputers to deal with the load.

Three webcasts, one from CSIRO in Canberra, one from James Cook University in Townsville and another from Perth Observatory, all saw unexpected levels of interest.

According to CSIRO there were 1.9 million hits on its webcast website, which was hosted by Telstra, and it streamed live video to just under 50,000 people.

"This is the most watched video-streaming event ever in Australia," CSIRO's Darren Osborne told ABC Science Online.

Perth Observatory tried to spread the load by sending half their images to a supercomputer elsewhere but even that was not enough.

"We had to transfer to another server because we were crashing our ISP," observatory spokesperson Peter Birch told ABC Science Online. "It just took off. I didn't expect anything like we got.

"This was unprecedented."

Simon Dixon network administrator of the observatory's ISP, Highway 1, said the event put "a bit of load" on the system because it was unexpected.

"I didn't know about it until the server was under load," he told ABC Science Online.

He estimated there had probably been between one and a few million hits on the Perth Observatory site and he would prefer to be warned before something like this happened again.

Birch agreed: "In the future thought I think I would have a long discussion with the ISP first," he said. "I don't think they would have believed a transit of Venus would have generated millions of hits." Not a new problem

The problem of webcasts overloading servers is not new. White cited the case of one webcast of a solar eclipse he was involved in during the late 1990s.

"I know that afternoon we stuffed up the university server. It was over 97% of its capacity for three hours," he said. "I got a funny letter from the web manager the next day saying 'Don't ever do that again'. He had his tongue in his cheek but I think he

was very, very surprised at how successful it was"

White said problems were also evident during the 2002 total solar eclipse.

"The world was bristling with webcasts but I couldn't get on to any," he said. "I sat there for an hour trying to find just one site.

"I know the technology is good. I know people are interested. The real problem is that the web is just not big enough and fast enough to do the job."

Osborne said as internet capacity increased, so had demand.

"In 1995 it was not uncommon to expect a simple page to take a minute to download," he said. "Nowadays we expect full video and motion.

"It raises some interesting questions about webcasting," he said. "How do you do it and still satisfy everyone? It's not like TV where it doesn't matter if there's one or one million people watching."

As for the show itself, it seems clouds obscured some of the transit for those viewing webcasts from Perth and Canberra.

"We had a huge band of cloud move in just before the transit began," said Osborne. But things turned out in the end.

"Just before sunset a gap in the clouds appeared and for the next 15 minutes we watched the sunset with Venus in front of it." Cloud also meant that Perth got "about half" the event.

No cloud at all from Townsville, though:

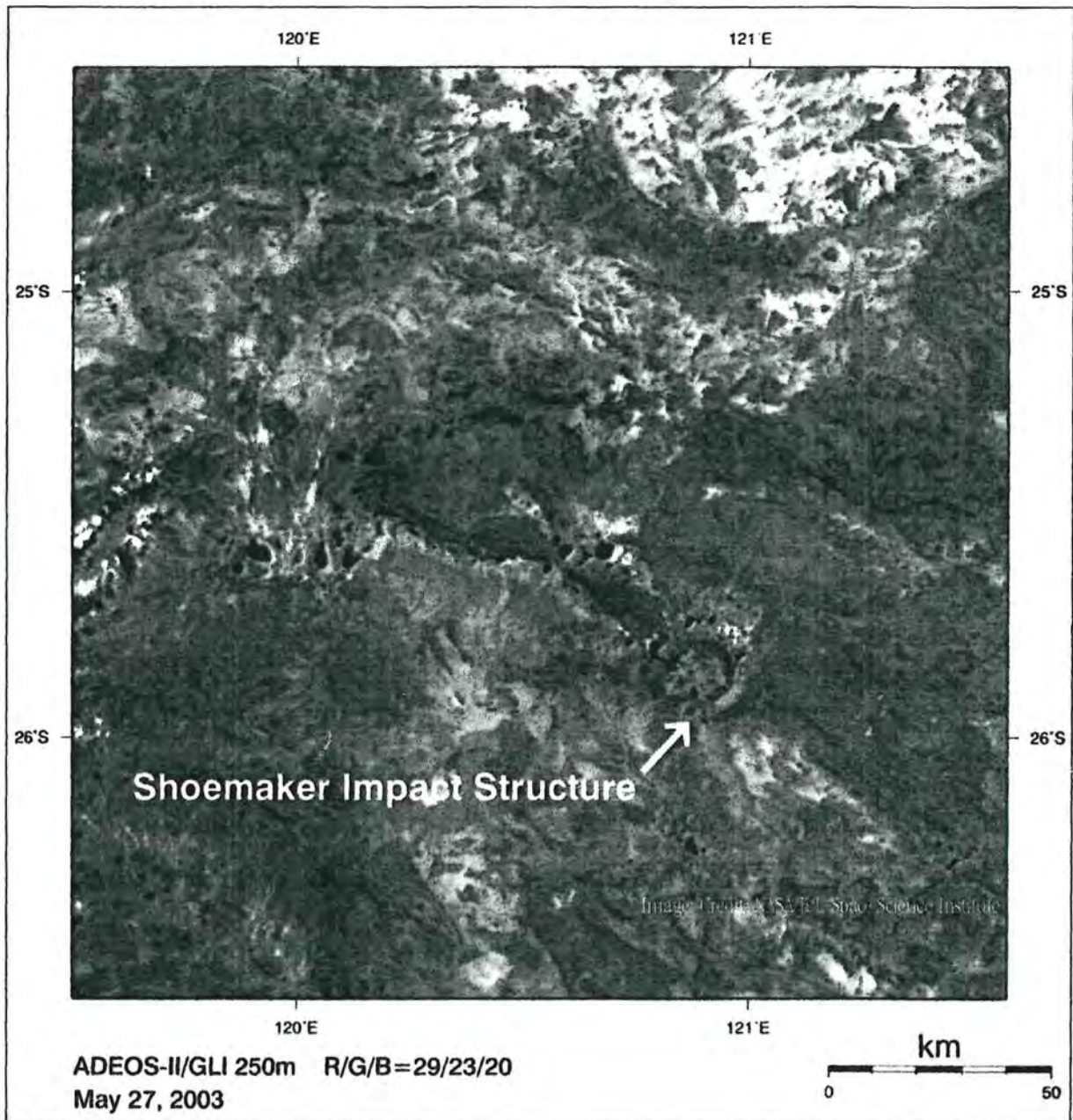
"It was absolutely perfect," said White.

Osborne said it was unclear whether anyone has seen the "black drop" effect, in which the shape of Venus appears to distort as it leaves the face of the Sun. He said some theories suggested this could be because optics had improved since the last time the transit was observed 122 years ago.

Anna Saleh, ABC Science Online 906604

In this issue: POVG's Meeting Minutes | Phases of the Moon
Dates & Times for Vollie Training and Meeting Nights | Astronomy news & events for June/July
Venus Transit & Mayans | Shoemaker-Levy Trip

Shoemaker Impact Structure Field Trip



The Shoemaker Impact Structure is named in honour of Gene Shoemaker, and was previously referred to as the Teague Ring. Gene was about to start cooperative work with Geological Survey of Western Australia (GSWA) scientists on the structure in 1997, when he was tragically killed in a car accident in northern Australia. The GSWA recently published a Report on the geology, geochemistry and geophysics of the structure (Pirajno, 2002). Study of the structure also forms part of an ASEG-RF funded PhD project at the University of Western Australia.

Shoemaker is located on the southern mar-

gin of the Paleoproterozoic Earaheedy Basin, 110 kilometres to the northwest of the township of Wiluna. Shatter cones and shocked quartz grains confirm that the structure is the result of a meteorite impact. The precise age of the impact is not known, but preliminary radiometric age dating suggests that it occurred sometime between 1000 and 600 Ma. The structure is 30 km in diameter and consists of a collar of upturned sedimentary rocks of the Earaheedy Group surrounding a core of centrally uplifted Archaean basement. The rocks of the central uplift were subjected to post-impact high-temperature hydrothermal alteration, resulting in pervasive alkali

metasomatism. The resulting rock of generally syenitic composition is collectively named the Teague Granite. Since its formation, Shoemaker has been eroded to a depth of about 3 km.

The Australian Society of Exploration Geophysicists (ASEG) is acknowledged for permission to publish this article on the CGM website.
<http://www.cgm.uwa.edu.au/public/philhawke/preview2002/preview2002.htm>

Don't forget to book your place for the Shoemaker Impact Structure Field Trip

Astro News

HUBBLE REVEALS DETAILS IN HEART OF THE TRIFID NEBULA

Three huge intersecting dark lanes of interstellar dust make the Trifid Nebula one of the most recognizable and striking star birth regions in the night sky. The dust, silhouetted against glowing gas and illuminated by starlight, cradles the bright stars at the heart of the Trifid Nebula. This nebula lies within our own Milky Way Galaxy about 9,000 light-years from Earth.

<http://spaceflightnow.com/news/0406/05hubbletrifid/>

HUBBLE REFINES DISTANCE TO PLEIADES STAR CLUSTER

Astronomers using NASA's Hubble Space Telescope have helped settle a mystery that has puzzled scientists concerning the exact distance to the famous nearby star cluster known as the Pleiades, or the Seven Sisters.

<http://spaceflightnow.com/news/0406/06hubble/>

FAINTEST SURVEY OF DISTANT GALAXIES TAKEN BY HUBBLE

Researchers have measured accurate distances to several faint, red galaxies seen in the Hubble Ultra Deep Field, confirming that three fourths are among the most distant galaxies yet studied.

<http://spaceflightnow.com/news/0406/06distant/>

SOURCES OF SOLAR HAZARDS IN INTERPLANETARY SPACE

Life on Earth is nurtured by heat and light from the Sun. Yet life on Earth also is inconvenienced, sometimes potentially threatened, when the Sun sends out huge blasts of energy and high-speed particles. On Earth, our atmosphere and magnetic field help protect us. But in deep outer space, and on the surface of the Moon and Mars, astronauts are vulnerable to solar eruptions.

<http://spaceflightnow.com/news/0406/05solarhazards/>

MARS ROVER OPPORTUNITY WILL DRIVE INTO ENDURANCE CRATER

NASA has decided the potential science value gained by sending Opportunity into a martian impact crater likely outweighs the risk of the intrepid explorer not being able to get back out. The soonest Opportunity could enter Endurance is early next week.

<http://spaceflightnow.com/mars/mera/0406/04crater.html>

PINWHEEL GALAXY'S HIDDEN WONDERS REVEALED

Like nosy neighbors, astronomers are spying on one of the nearest galaxies to our Milky Way. In studying the Pinwheel Galaxy, also

known as Messier 33 (M33), they seek not malicious gossip but new knowledge as they search for clues to how galaxies like our own are born, live and die.

<http://spaceflightnow.com/news/0406/04pinwheel/>

CASSINI GETTING EVER CLOSER TO COLORFUL SATURN

As Cassini coasts into the final month of its nearly seven-year trek, the serene majesty of its destination looms ahead. The spacecraft's cameras are functioning beautifully and continue to return stunning views from Cassini's position, 750 million miles) from Earth and now 9.8 million miles from Saturn.

<http://spaceflightnow.com/cassini/0406/03saturncolor.html>

PROOF FOUND FOR GAMMA-RAY BURST IN MILKY WAY

Combined data from NASA's Chandra X-ray Observatory and infrared observations with the Palomar 200-inch telescope have uncovered evidence that a gamma-ray burst, one of nature's most catastrophic explosions, occurred in our Galaxy a few thousand years ago. The supernova remnant, W49B, may also be the first remnant of a gamma-ray burst discovered in the Milky Way.

<http://spaceflightnow.com/news/0406/03grbmilkyway/>

LOOKING TO CATCH STARS IN THE ACT AS PLANETS FORM

For young stars, the peak age for planet formation is around 1 to 3 million years. By 10 million years old, their resources are exhausted and they retire to a life on the stellar "main sequence." Using telescopes on the ground and in space, a team of astronomers is studying Sun-like stars in their waning formative years. They seek to refine our understanding of planet formation by studying dusty protoplanetary disks around such stars.

<http://spaceflightnow.com/news/0406/03dustdisk/>

MONSTER LIES CAMOUFLAGED INSIDE NEBULA'S HEART

Most galaxies, including the Milky Way, are filled with giant clouds of gas and dust called nebulae that appear as dark silhouettes against the starry background. Nebulae shine only when illuminated or excited by nearby energy sources.

<http://spaceflightnow.com/news/0406/02monster/>

BOEING TO STUDY NEPTUNE MISSIONS FOR NASA

While Boeing is preparing to deliver a proposal to NASA's Jet Propulsion

Laboratory for what could become the nation's first nuclear-fission powered exploration spacecraft, the company also is using its unique space heritage and expertise to propel robotic solar system exploration farther than Jupiter.

<http://spaceflightnow.com/news/0406/02neptune/>

GREAT OBSERVATORIES FIND BLACK HOLES, HIDDEN OBJECTS

Astronomers unveiled the deepest images from NASA's new Spitzer Space Telescope Tuesday and announced the detection of distant objects-including several supermassive black holes-that are nearly invisible in even the deepest images from telescopes operating at other wavelengths.

<http://spaceflightnow.com/news/0406/01hidden/>

ROBOTIC SERVICING MISSION TO HUBBLE CONSIDERED

NASA is asking for proposals to mount a robotic mission to service the Hubble Space Telescope, the agency announced Tuesday. Earlier this year, NASA Administrator Sean O'Keefe killed plans to launch a final space shuttle servicing mission due to human safety concerns in the wake of Columbia. Read the NASA announcement:

<http://spaceflightnow.com/news/0406/01hubble/>

PARALLELOGRAM-SHAPED GALACTIC MEAL SPIED

Peering into the "gut" of the galaxy Centaurus A, NASA's Spitzer Space Telescope has captured in unprecedented detail this massive galaxy's last big meal: a spiral galaxy twisted into a parallelogram-shaped structure of dust.

<http://spaceflightnow.com/news/0406/01parallelogram/>

EUROPE'S ROSETTA PROBE OBSERVES COMET LINEAR

ESA's comet-chaser Rosetta, whose 10-year journey to its final target Comet 67P/Churyumov-Gerasimenko started on March 2, is well on its way. The first phase of commissioning is close to completion and Rosetta has successfully performed its first scientific activity - observation of Comet Linear.

<http://spaceflightnow.com/news/0405/30cometlinear/>

DOUBLE STARS EMERGE AS HEAVYWEIGHT CHAMPIONS

About 20,000 light-years from Earth, two massive stars grapple with each other like sumo wrestlers locked in combat. Both giants, each weighing in at around 80 times the mass of our Sun, are the heaviest stars ever. They orbit each other every 3.7 days,

'thanks'

A big thanks
to all vollies (and permanent staff)
who have assisted directly and indirectly
with the record number of
Star Viewing Night visitors.



PERTH OBSERVATORY
337 Walnut Road, Bickley WA 6076
<http://www.wa.gov.au/perthobs>

POVG Minutes

Perth Observatory Volunteer Group Inc.
Minutes of Meeting
May 17th 2004
Meeting Commenced at 7.10

Present. E.Walker. D.Emrich. R.Boelen.
R.Tanello. A.Williams. M. Haslam. J.Morris.
J.Alcott. P.Birch. J.Milner. G.Lowe. L.Martin.
F.Bilki. B.Harris.

Apologies.

L.Bell. J.Bell. M.Freeman. T.Beardsmore.
K.Kotze. G.Coletti.

Confirmation of Minutes.

Agreed that they are a true and correct record. Moved J.Milner seconded J.Alcott

Treasurer's Report.

B.Harris tabled the Audited Accounts for the previous year. The funds in the Bank remain unchanged at \$210.33. He had received notification from the Taxation Office indicating that we were required to enter a Tax Return. He also needed to obtain sample Signatures from the new Committee.

General Business.

D. Emrich asked where the Group obtained the Volunteer coats from, it was thought that they cost approximately \$120.00 each, B.Harris undertook to look up the name of the Supplier. If sufficient numbers were required it might be possible to obtain a discount.

P.Birch reported that the Comets were now visible, Comet Neat was fading, and Comet Linear could be viewed soon after sunset in the S.West climbing higher every night, but regrettably they required Binoculars, and would not become naked eye objects. They could now be viewed on the new Sky Camera, now operating from the roof of the Observatory building, accessed from the Observatory Web Site. The Transit of Venus across the Sun would occur during the afternoon of June 8th this would also be shown on the Sky Camera, weather permitting.

There being no further General Business the meeting closed at 7.44pm
Next Meeting June 14th

A big thanks to all Vollies and Staff for a job well done

Thanks to all vollies (and permanent staff) who have assisted directly and indirectly with the record number of Star Viewing Night visitors. The very successful Mars Viewing Nights were the vehicle to

push these up, so it has been a long season for most (except myself!). And I can only promise more night work in the coming season, but at least we'll have about four months break. Also, we are organising a

Vollies reward night at the Scitech Planetarium in July, so all who contributed to the Observatory's activities are welcome to come along and enjoy the fun.
Jamie Biggs.

VOLLIE ROUNDUP
REGISTER YOUR
DAYS AND HOURS
NOW!

In order to assist the Observatory plan its operations for 2004/2005 could all vollies please register their intended number of days and hours per month in the programmes they are currently engaged in (eg Star Viewing Nights .).

Please contact Greg Lowe with this information before 2004/07/01.

HELP WANTED

POVG Assistants Urgently Required

3 excellent positions available

Newspaper article collators

One person (plus deputy) to collect newspaper articles relating to Perth Observatory and other local astronomy/astrophysics activities.

Duties: Scan local newspapers, and the like, for relevant articles. Remove articles from the newspaper. Clearly print source and date on article. Forward articles to Observatory in a timely manner (say at least every two weeks).

Deputy to stand in for short periods when requested. Record and report number of hours the incumbents have spent on the project. These positions are ongoing.

Contact Jamie Biggs for further information or to apply. Applications close 2004/07/01.

Dr James Biggs
Government Astronomer/Director
Perth Observatory

Data analyst

One person to analyse BoM hourly weather data (from 1998) for Perth Observatory (Bickley). Ultimately, they will produce a report with annual averages of wind speed and direction, and relative humidity, as a function of season and time, as well the standard deviation of the quantities.

The successful candidate will probably need familiarity with software such as MS Access and Excel (available at the Observatory), or any other similar software package. It is anticipated that this work should take about 50 hours to complete.

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The Maya and the 2012 transit of Venus

2012: End of the 5th Sun

by Will Hart

Certain aspects of the interlocking Maya calendar system have filtered into public consciousness in the last decade and a half. One of them is the prediction that we will come to the end of a solar-planetary cycle in 2012. But what is this cycle exactly and why is it going to end on the winter solstice of that auspicious year? Is the world going to end as some people are forecasting?

The Maya conceived of time and human history as moving in cycles, small and large. While we use a single calendar to keep track of our annual solar circuit and to mark all of the important days within a year, the Maya used a variety of calendars. The array included a 365-day solar calendar, a 260-day sacred calendar and a Long Count calendar that operated something like an odometer with a zero start date. Unlike the other calendars the Long Count clocked linear time and was programmed to stop after 5,125 years elapsed.

The Long Count was begun at the onset of this current cycle, known as the 5th Sun, in 3114 BC. It will clock the required number of years to complete a full cycle of five suns on December 21, 2012. John Major Jenkins has made the case that this date corresponds to two major alignments, (one between the winter solstice sun and the galactic equator; the other an approximate one between solstice sun and galactic core) and it also completes the Great Zodiac precession cycle of 26,000 years. I am not questioning this thesis however I do wonder if that is all there is to the end of this solar cycle- the 5th Sun?

The Maya began their Long Count on what they referred to as the 'Birth of Venus.' Scholars have never been able to determine what the Maya were referring to and neither have alternative researchers. Nevertheless their sacred calendar, the Tzolkin, placed the synodic cycles of Venus in a central role. The 104-year 'Venus Round' cycle (2 Calendar Rounds of 52 years each), was a very important ceremonial event as this was the point in time when the solar and sacred calendars realigned with the cycle of Venus.

I need to insert an important numerical progression at this point to provide a basis for the rest of the article. The number thirteen was a root number for the Maya. It is both a prime number and the eighth num-

ber in the crucial Fibonacci series that is one source of the Golden Ratio, 1.618.

If we use 13 as the root of the Mayan calendar system we find the following sequence: 13, 26, 39, 52, 65, 78, 91 and 104, which are achieved by simply adding 13 to each succeeding sum. These are the key numbers in the Mayan calendrics and they have a solid scientific footing. Venus was the central component of the Mayan cosmology. It is for good reason that our nearest planetary neighbor is called earth's sister planet. They have a phase-locked orbital cycle that is based on a 13:8 ratio. That is derived from the fact that Venus revolves around the sun 1.6 times faster than Earth so that 13 Venus revolutions is equal to 8 years. Why is this important? By establishing Venus as the key component of the sacred calendar they automatically built the Golden Ratio (1.6) into the system since that ratio defines the difference between the two planets orbital cycles. By using 13 as the root number they also included the crucial multiples, or powers, of thirteen - 13,000 and 26,000 - or half as well as the full number of years in the precession. We see that the 5 Suns, each lasting 5,125 years, also add up to the Great Zodiacal Year.

We can break these numbers down in different ways and each will show that there was nothing arbitrary about the Mayan system. We somewhat arrogantly disdain other cultures for being superstitious until we come to the number 13 and our own irrationality surfaces. But let's examine how deeply embedded this number - as well as 26, 52 and 91 - are in our own calendar. Our year is divided into four seasons that are demarcated by the equinoxes and solstices.

Each of the four seasons is 91 days or 13 weeks long, which gives us a year of 52 weeks. We see the key Maya 13-base numerical progression reflected in our own calendar. Half of a year is 26 weeks. It is beyond the scope of this article to delve into all of the intricacies of the Mayan calendrical and mathematical systems; they were extremely adept in these fields.

What I have uncovered during my decades of research into this topic are two crucial keys to understanding the system: the "Transit of Venus" and solar output cycles. It just so happens that the 2012 end

date corresponds to a Venus Transit cycle that occurs twice in the next 10 years in 2004 and then in 2012. As mentioned above Venus was central to the Mayan cosmology. The Long Count began on what the Maya call the "Birth of Venus" so it is perhaps not too surprising that it ends on a Transit of Venus.

My research has revealed that a Transit of Venus occurred in 1518 and 1526. This was the period when Cortez landed on the shores of the Yucatan and wound up conquering the Aztec empire. The next transit was in 1631-'39. It was followed by a complete stoppage of the sunspot cycle, which lasted for 70 years (science has no explanation for this event). The 'little ice age' occurred between 1645 and 1720. What do we find associated with the next transit in 1761-'69? We discover the birth of the American Revolution.

There is no doubt that the Transit of Venus was an important divinatory alignment factored into the Maya calendar. We will not have to wait for long to test this theory and also get a glimpse of 2012 during the 'passage' years. But in reality as Jose Arguelles and others have pointed out the precursor years began in 1987 and the final stages of this cycle really kicked into gear in 1991-'1993. How do we know? There has been a tremendous surge in the number and magnitude of natural disasters and this was also forecast as a harbinger of the 5th Sun's demise.

13,000 years is a very important time period since we know that the last ice age ended then. This indicates that there is a periodicity to the solar output cycle. There are short and long term fluctuations in solar output and as a result great ice ages, little ice ages and warm interglacials, which we are in nearing the end of now.

The cyclical nature of the long range weather patterns are well established is are the variable nature of solar activity. We know that that is true since we have been in a 'global warming' period for the past 300 years. The "little ice age" started to thaw in the early 1700s when the sunspot cycle returned. The level of solar activity has been increasing steadily from that 'zero sunspot point' right up to our recent sunspot cycles in 1989-'90 and the double peak in 2000-'02.

(cont.) Is it a coincidence that 2012 also coincides with the next solar sunspot maximum? The actual peak of this 300-year cycle of increasing solar output occurred in 1960 when the number of sunspots exceeded 200, the usual peak is around 100-150. Now, what is interesting is that during the first half of the 20th century the Earth's seismic and volcanic activity were comparatively quiet.

Then after 1960 the level of seismic and volcanic activity increases steadily to the point that the 1990s can accurately be called the 'decade of disasters'. The surge in major earthquakes and volcanic eruptions radically departed from earlier decades. According to the chief scientist for the world's largest reinsurance company Zurich Re, "since 1960 natural disasters are a growth industry."

I hardly need to mention "global warming" since it is constantly in the headlines. However, the truth is obvious for those that care to see it. The Earth has been warming for 13,000 years with periodic short-term cold spells. However, solar output is the forcing mechanism behind global warming and the 5th Sun is intimately tied to that phenomenon. What does the end of the 5th Sun really mean?

I take it very literally to mean that the sun's output is going to change. We are going to enter the flip side of a new 13,000 year cycle. The earth is overheated and so is the sun, the result being planetary instability

manifested in rising earthquakes, volcanic eruptions and erratic weather patterns.

These will increase further starting in 2004. The volcanic ash will create more and more cloud cover and that will begin to cool the planet down. If my theory is correct the Maya knew that the Venus Transit acted like a circuit breaker switching off the sunspot cycle and impacting the Sun-Moon-Earth-Venus system. This appears to have happened just prior to the previous two 'little ice ages' that were preceded by what solar physicists call the Spörer (1400-1510) and Maunder Minimum(s) 1640-1710), periods of radically diminished solar activity.

The Venus Transit will trigger the demise of the 5th Sun and set the stage for the next cycle, the 6th Sun. That is the physical side of the Maya 5th Sun forecast. Unlike many predictions this one is built into the Maya calendar and it can be verified with some historical research. Is the world going to end in a violent crescendo of natural disasters and impacts from cosmic objects? I do not think that is likely nor is it what the Maya predicted.

However, a prolonged period of change is on the horizon that will be ushered in by the 2004 - 2012 'passage'. It will culminate in the galactic alignment and complete the precessional cycle at that point.

References
The Rise and Fall of Maya Civilization, Thompson J. Eric
The How and Why of Maya End Date in 2012 A.D. Jenkins J.M. 1994 (article)
2004-2012 Transits of Venus, Espenak, F. (NASA article)
Abrupt Climate Change: Should we be worried? Gagosian, R.
Little Ice Age a Global Event, Dalziel, D.
<http://www.diagnostics2012.co.uk/5thsun.htm>

PHASES OF THE MOON FOR 2004

New Moon	First Quarter	Full Moon	Last Quarter
Jan 22 05:05	Jan 29 14:03	Jan 7 23:40	Jan 15 12:46
Feb 20 17:18	Feb 28 11:24	Feb 6 16:47	Feb 13 21:40
Mar 21 06:41	Mar 29 07:48	Mar 7 07:14	Mar 14 05:01
Apr 19 21:21	Apr 28 01:32	Apr 5 19:03	Apr 12 11:46
May 19 12:52	May 27 15:57	May 5 04:33	May 11 19:04
Jun 18 04:27	Jun 26 03:08	Jun 3 12:19	Jun 10 04:02
Jul 17 19:24	Jul 25 11:37	Jul 2 19:09	Jul 9 15:33
Aug 16 09:24	Aug 23 18:12	Aug 1 02:05	Aug 8 06:01
Sep 14 22:29	Sep 21 23:53	Aug 30 10:22	Sep 6 23:10
Oct 14 10:48	Oct 21 05:59	Sep 28 21:09	Oct 6 18:12
Nov 12 22:27	Nov 19 13:50	Oct 28 11:07	Nov 5 13:53
Dec 12 09:29	Dec 19 00:40	Nov 27 04:07	Dec 5 08:53
		Dec 26 23:06	

<http://www.wa.gov.au/perthobs/hpc5m03.htm>

(cont.) nearly touching as they spin on the celestial stage.

<http://spaceflightnow.com/news/n0405/29doublestars/>

MOON TELLS OF UNEXPECTED EARTH CLIMATE CHANGES

Scientists who monitor Earth's reflectance by measuring the moon's "earthshine" have observed unexpectedly large climate fluctuations during the past two decades.

<http://spaceflightnow.com/news/n0405/28earthshine/>

RAW INGREDIENTS FOR LIFE FOUND AROUND YOUNG STARS

NASA has announced new findings from the Spitzer Space Telescope, including the discovery of significant amounts of icy organic materials sprinkled throughout several "planetary construction zones," or dusty planet-forming discs, which circle infant stars.

<http://spaceflightnow.com/news/n0405/27spitzer/>

CASSINI SPACECRAFT EXECUTES CRUCIAL ROCKET FIRING

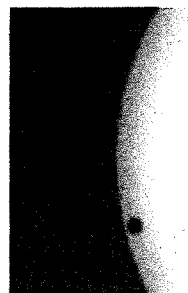
For the first time in nearly five years, the Cassini spacecraft's main engine system ignited Thursday evening for a critical course adjustment that will serve as a dress rehearsal of sorts for Saturn orbit insertion July 1.

<http://spaceflightnow.com/cassini/n0405/27bum.html>

PROPOSED NUCLEAR-POWERED JUPITER MISSION DEFINED

NASA has issued its mission design requirements to three industry teams for a proposed mission to Jupiter. The Jupiter Icy Moons Orbiter is a spacecraft with an ambitious proposed mission that would orbit three planet-sized moons of Jupiter -- Callisto, Ganymede and Europa -- that may harbor vast oceans beneath their icy surfaces. The mission would be powered by a nuclear reactor and launched sometime in the next decade.

<http://spaceflightnow.com/news/n0405/27jmo/>



Perth Observatory Volunteers' Group

2004 Volunteer Training & Meeting nights

Dr Jamie Biggs
Peter Birch
Ralph Martin
Dr Andrew Williams
Rick Tanello
Greg Lowe
Janet Bell
Di Johns
Arie Vermeer
John Pearce
Marc Appelfhof

PERTH OBSERVATORY STAFF
Director and Govt Astronomer
Astronomer
Astronomer
Astronomer
Astronomer Assistant
Astronomer Assistant
Administration Officer
Clerical Officer
Technical manager
Mechanical technician
Maintenance Person/Cleaner

Mike Freeman
Elaine Walker
John Morris
Bevan Harris

POVG VOLUNTEERS
Chairperson
Vice Chairperson
Secretary
Treasurer and newsgroup moderator
(contact: ngc2070@bigpond.com)

Jeff Alcroft

Editor (contact: callides@iinet.net.au)
or through newsgroup

Observatory's Volunteers' Active Member List

Jeff Alcroft	Giuseppe Coletti	Bert Hollebon	Lloyd Robinson
Dick Alderson	David Emrich	Karen Kotze	Sascha Schediwy
Jeanne Bell	Keith Ford	Erin Lalor	Val Semmler
Trevor Beardsmore	Marcel Fortsch	Vic Levis	Vera Smith
Lyall Bell	Mike Freeman	Rob Loney	Patricia Turner
Frank Bilki	Lynda Frewer	Andrew MacNaughtan	Elaine Walker
Tony Beston	Bevan Harris	Len Martin	Sandra Walker
Ric Boelen	Don Hartley	Jacquie Milner	Matthew Zengerer
Eve Cowlishaw	Mark Haslam	John Morris	

Training is important for our volunteers, they enjoy it and we need to support these staff members in return for the assistance they render.

Generally, these training nights are scheduled for 7pm the Monday after the week of Last Quarter.

This list is also displayed on the volunteer noticeboard.

Your cooperation is appreciated. Jamie Biggs. Govt Astronomer

July 12th & August 9th

Have you joined the Vollie Newsgroup yet?

If you've got any news, information or pics
post them on the newsgroup.

To join simply send your email address to Bevan Harris at:
ngc2070@bigpond.com

To unsubscribe send an email to:
perthobsvollies-unsubscribe@yahoogroups.com.au
To modify your subscription, visit the group website at:
<http://au.groups.yahoo.com/mygroups>



PERTH OBSERVATORY
337 Walnut Road, Bickley WA 6076
<http://www.wa.gov.au/perthobs>

POVG

Perth Observatory Volunteers Group