NORFOLK SKIES

The Official Newsletter of the new Norfolk Astronomical Society **Glendon L. Howell, Editor**

Volume I; Number 6 June 2001

Meetings And Events For June 2001

Date	Activity
Tue., Jun. 5	**Robots Playing Soccer,** free Sigma Series lecture given by Professor Rafaello D'Andrea, 7:30 PM at the Virginia Air & Space Center, Hampton.
Sat., Jun. 23	**NAS Cookout / Observing Session**, 3 PM until ? at Glen Howell's. Caravan down to Glen's parents for observing that evening, weather permitting (see article)

A Meeting To Address The Needs Of Our Organization – Cookout And Observing Planned

Mark your calendars now for **Saturday, June 23**. In lieu of a first Thursday meeting at a local restaurant, members and their families are invited to attend a cookout at Glen Howell's, 2808 Flag Road, in Chesapeake. Glen will provide the meat (hamburgers, hotdogs, chicken) cooked on a smoker grill, and asks members planning to attend to volunteer to bring a side item. ***Please RSVP before Wednesday, June 20 by email (nas2000@hamptonroads.com) or by calling Glen at 485-4242.***

One of the topics that needs to be addressed at this meeting is what future direction would the membership like for our new organization to take? As such, I would hope that every member would try to attend and voice their opinion. Other needs of the organization also need to be addressed like securing a permanent meeting site and observing site. Please try to attend!

Weather permitting, after the meeting and cookout, we have the option to go observing so bring your telescopes to the meeting too. Again, I will volunteer to take everyone who wants to, to caravan down to my parent's place down in dark Gates County, NC, about a 1 hour drive from my home near Deep Creek. If the weather is questionable we may still opt to observe Mars just a few days past its closest approach to Earth from my backyard. I hope most everyone can attend.

Get Ready In June For Mars

By Glendon L. Howell

This month the planet Mars makes its closest approach in many years. As the month begins Mars, at magnitude –2.0 and having an angular diameter of 19.3 arc seconds, lies in Sagittarius not too far from the Lagoon Nebula (M8). Its retrograde motion toward the west will carry it into Ophiuchus and near the globular M19 by month's end.

On June 13, the planet reaches opposition (opposite the Sun) and thus officially enters the evening sky. Shining at magnitude –2.3, it now shows full phase toward the Earth (Mars can show a Gibbous phase) at 20.5 arc seconds, and lies at a distance of 0.456 AU (42.4 million miles).

Normally opposition is associated with the closest approach of a superior planet (one beyond Earth's orbit), but due to the large eccentricity of its orbit, closest approach does not occur until nearly a week later on June 21. On that date, Mars lies at 0.450 AU (41.8 million miles), at magnitude –2.3 still, and at it greatest angular size this apparition of 20.8 arc seconds. It is interesting to note that even at this closest approach, it still takes light nearly 3 minutes 45 seconds to reach us from the planet. Compare that to 2 seconds for light to travel from our Moon.

During this close apparition, surface markings and the polar caps are more readily visible even in small telescopes. As mentioned in the last March newsletter, software Mars Previewer II (mp201.zip) is available from Sky & Telescope magazine free for downloading which will help you identify surface markings. The software is available at:

http://www.skypub.com/resources/software/basic/basic.html

Local Planetarium Shows

THE MYSTERY OF STONEHENGE will be shown **Thursdays, June 7, 14, 21, and 28**, from 8 to 9 PM at the Chesapeake Planetarium, 300 Cedar Road. The program examines how Stonehenge, a circle of stones in Great Britain might have been used to predict eclipses by the ancient people who built it. Telescope outing immediately after the show, weather permitting. Admission free. For reservations call 547-0153.

THE EXPLORERS will be **Tuesdays, June 4, 11, 18, and 25**, from 7 to 8 PM at the Virginia Beach City Public Schools Planetarium, 3080 S. Lynnhaven Road, in Virginia Beach. The program retraces the steps of the early navigators of Hawaii who sailed amongst the Pacific islands nearly 2000 years before Captain Cooke. Admission free. For reservations call 431-4067.

JOURNEY TO MARS will be shown weekdays at 2:30 PM, and at 11 AM, 1:30 PM, and 3:30 PM Saturday, and at 1:30 PM and 3:30 PM Sundays at the Virginia Living Museum Planetarium, 524 N. J.Clyde Morris Blvd, in Newport News. The program discusses the planet through our mythology up to what we now know about it from space exploration, and projects ideas about what a future mission to the red planet might be like. Admission $3.00. For information call 595-1900.

East Coast Star Party 2001

A Report by Kent Blackwell, Sponsor

The forecast for this year's ECSP on May 18 & 19 was not good. This is unfortunate because the Tidewater area had experienced exceptionally dry, clear weather two weeks prior to this.

Registration began on Friday May 18 at noon. By this time Matt Broscious, his wife and three sons from Monrovia, MD had already set up camp. Just before nightfall a handful of people arrived, hoping the forecasters were wrong about the weather predictions. Unfortunately it remained cloudy most of the night, however we did have two hours of clearing skies around midnight. Though the sky was hazy the seeing was impeccable. I rated the transparency 5 on a scale of 10, but I rated seeing as an 8.

Most had put their scopes away early for fear of rain, but since my 25" can be easily and quickly rolled in and out of the trailer we used that telescope. M 13 was simply spectacular. I even managed to increase magnification to 450x. The beautiful cluster looked more like an open cluster than a globular. Other interesting objects viewed in Hercules included the small planetary NGC 6210 and the globular M 92. We also observed the globular cluster M 5 in Serpens Caput, The Box Planetary Nebula (NGC 6309) in Ophiuchus, The Owl Nebula (M 97) in Ursa Major, and the best of all, The Ring Nebula (M 57) in Lyra. I was able to push the power on the Ring Nebula to 611x. At that magnification the Ring barely fit in the field of view. Using averted vision we managed to see the very challenging 15th magnitude central star. Not only is it a faint 15th magnitude but also a blue star. Blue stars tend to be difficult for our eyes to see. If that isn't enough it is thought to be variable. The last object before the clouds rolled back in was NGC 6543, The Cat's Eye. By 2:00am it was completed cloudy again. Wesley Jacocks reported it cleared again at 3:00am, but the rest of us had turned in for the night.

Despite the forecast of rain on Saturday the skies were beautifully sunny all day. At 6:00pm I gathered everyone together for a cookout of hamburgers and hot dogs, and once again Bob Hitt was our cook. During the cookout the temperature dropped and fog and clouds rolled in. After dinner door prizes were handed out. Congratulations to Dale Carey, Daniel Freas, John & Jeanette Hamilton, Georgie June, Oscar Lopez, Dick Moncure and Kelly Proffitt as winners of books, accessories and eyepieces. Thanks to

the vendors who were gracious to send these prizes, especially Meade and Tele Vue for the donation of fine eyepieces.

I hope the weather is better for the next East Coast Star Party scheduled the weekend of October 19 & 20, 2001. Thanks to the 35 or so who did show up, sorry the weather wasn't more cooperative.

The French Connection

Post-humously by William N. "Chuckwagon" Gray
From the July 1980 issue of "Between The Stars"

After an absence of over a century, 1761 was the year of the long awaited "Transit of Venus". It would be the first of a pair of transits that would occur within a period of eight years. The next one would be in 1769. In France, the academy of Science was sending a team headed by the astronomer Le Gentil, to the East Indies for the event.

Unfortunately - England and France were at war at the time, and when Le Gentil's ship reached its destination, he was unable to land. The English had already taken posession of the land! They attempted to land at another island, but were blown off course by a series of storms. As a result, on the day of the transit, they were still many miles out at sea, and missed it entirely.

When he finally did make port, at another island, Le Gentil made the announcement that the ship would be returning to France, but that he would be staying there to await the next transit. This, of course, would not take place until 1769 - eight years later! (I have tried to find out why he made such a decision, but the only thing I could come up with was that he got sea-sick awful easy.)

He managed to live in a very comfortable manner during these years as a result of several profitable investments. Also, he was able to devote considerable time to his many scientific pursuits. And so - the years went by swiftly.

And then, the long awaited morning of June 4, 1769 arrived! He had chosen an excellent location from which to make his observations, and all his instruments were in place and ready. The weather was perfect - not a cloud in the sky! But - just as the transit was due to begin - a storm came up, and the sky became completely covered with clouds!

By the time they cleared away and the storm was over, so was the transit of Venus! It would be several weeks before Le Gentil could hold a pen to write his friends in Paris of the story of his disappointment!

No article on the "Transit of Venus" would be complete without the following quotation. It was written by William Harkness of the Naval Observatory in Washington, D. C. The year was 1882:

"There will be no other Transits of Venus til the 21st century of our era has dawned upon the Earth, and the June flowers are blooming in 2004. When the last transit occurred, the intellectual world was awakening from the slumber of ages, and that wonderous scientific activity which has led to our present advanced knowledge, was just beginning. What will be the state of science when the next transit season arrives, God only knows!"

Looking Ahead To The 2004 Transit Of Venus

by Glendon L. Howell

Three years from now, on June 8, 2004, the planet Venus, at inferior conjunction, will pass directly across the face of the Sun. Again, eight years later, on June 5, 2012, the planet will again "transit" the solar disk. As it turns out, 13 revolutions of Venus almost perfectly equal 8 revolutions of Earth around the Sun, so every eight years, the orbital circumstances nearly repeat. Then there won't be another transit visible of Venus for 105.5 years (December, 2117). Unlike transits of Mercury, no magnification is necessary to observe the 58.6 arc second dark disk of the planet silhouetted against the Sun's photosphere, though viewing through a safe solar filter is highly recommended!

Transits of Venus are rare. The 2004 event will be only the sixth one ever observed. The others were seen in 1639, 1761, 1769, 1874, and 1882. The 2004 transit will be in progress at sunrise here in Hampton Roads, but will end an hour and a half afterward. Sunrise or Sunset photos taken of the event with an interesting foreground might make for a beautiful and interesting scene. For those willing to travel, the entire 6 hour event will be visible from northern Greenland, eastern Europe, western Asia, and the Middle-Eastern countries.

The 2004 event begins at 5:21 UT, reaches its mid-point at 8:23 UT, and ends at 11:16 UT, with the transit visible over the entire daytime side of the Earth. Using both the Day/Night display feature of the shareware program Astronomy Lab 2.0, and the World Map mode of STS Orbit satellite tracking software, and using the above times I was able to check visibility of the event from various sites around the world.

At 5:21 UT (1:21 AM EDT) on June 8, 2004, the sun will have just set for Hawaii which will miss the entire event, but will have just risen in Spain. Alaska, Greenland, all of Europe, Asia, and Australia will see the ingress of Venus onto the disk of the Sun which takes about 20 minutes. Most of Africa also sees the ingress, except for the most western third of the continent. The Sun is directly overhead for residents of southeast Asia. Meanwhile it is night-time in the Americas.

At 8:23 UT (4:23 AM EDT), the sun has now climbed to high overhead over the Persian Gulf and Saudi Arabia. The sun has risen by now for Nova Scotia in eastern Canada but has not quite risen yet in South America. All of Europe, Africa, and Asia can now see the event as well as Greenland. The sun has set though for southernmost Alaska, and the eastern half of Australia.

By 11:16 UT (7:16 AM EDT), when the transit is due to end, the sun is now high overhead in the eastern Sahara of Africa. The sun has now risen for the eastern half of the U. S. and most of Canada except for the most western part, and South America except for the the southern part. The sun has set for Japan, eastern China, and Australia.

So where is the best place to go to view this event? Well, this article has not dealt with weather prospects for specific locales, and indeed even from Hampton Roads, the last 1.5 hours of the event will be visible. Local sunrise will be at 5:46 AM EDT. However, if you head north to Nova Scotia, you can add another couple of hours to the event. Even a side trip to Europe or the Middle East (the most favored area) might be of interest for such a rare event. So, begin to save your pennies now!

For those wishing to learn more, please consult the following web sites just for starters:

http://dialspace.dial.pipex.com/eclipse99page/venus.htm
http://www.rasnz.org.nz/Transits.htm
http://canopus.saao.ac.za/~wpk/tov1882/tovwell.html
http://www.dsellers.demon.co.uk/venus/ven_ch4.htm
http://www.dsellers.demon.co.uk/venus/ven_ch5.htm

Color Astrophotography
By Preston Scott Justis & Sean Walker

OBJECT : NGC 5457 / M 101
TYPE : Spiral Galaxy in Ursa Major
EXPOSURE: LRGB Composite

Picture Window Pro digital stack of 100, 90, and 50 minute exposures on Tech Pan 2415 prime focus through Scott's 10-inch f/6 Newtonian. Sean's RGB CCD image was taken through a Televue 85mm refractor.

Visit Scott's Web Site at
http://home.earthlink.net/~psjustis/Astrophotos.htm

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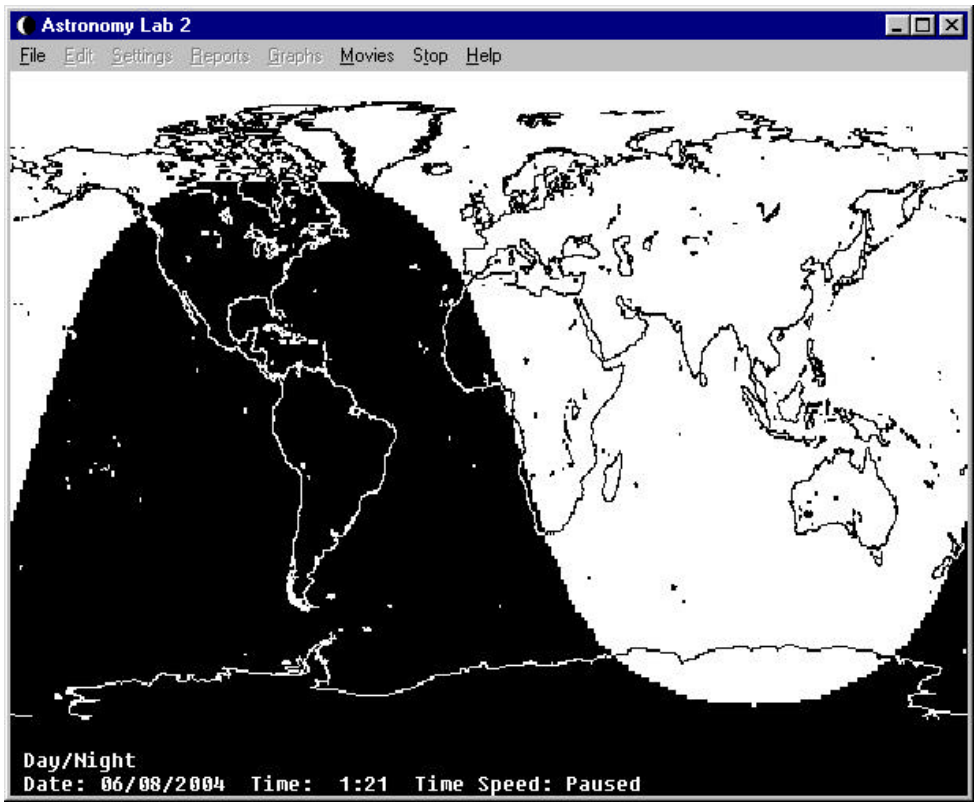
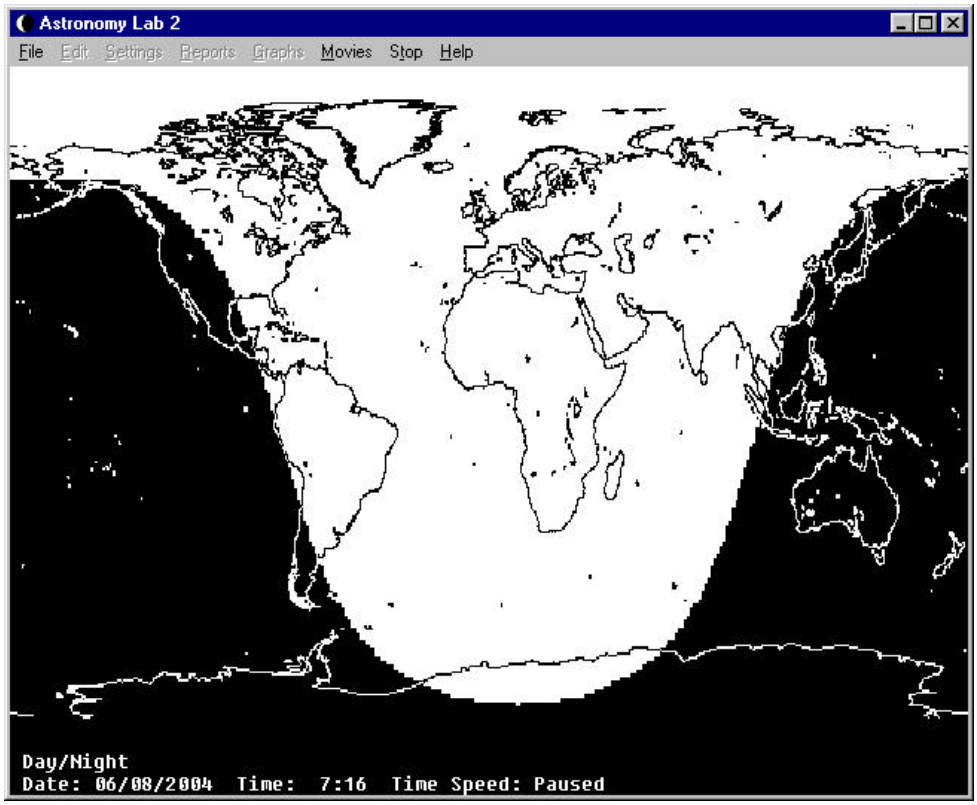
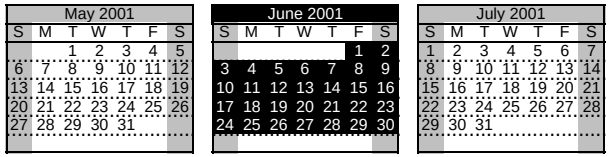


The Transit Of Venus Begins At 1:21 AM EDT



The Transit Of Venus Ends at 7:16 AM EDT

Norfolk Astronomical Society Astronomical Calendar



May 2001						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

June 2001						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

July 2001						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

All times are EDT

http://groups.hamptonroads.com/NAS/

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27	**28**	**29**	**30**	**31**	**1**	**2**
						12:28 AM Moon occults 80 Virginis (+5.7)
3	**4**	**5**	**6**	**7**	**8**	**9**
	2:21 AM Moon occults double star 29 Librae (+6.1) 8:00 AM Pluto reaches opposition	7:30 PM "Robots Playing Soccer" Sigma Series lecture at VASC 9:39 PM Full Moon	3:00 PM Mars 4 degrees south of Moon	1:31 AM Moon occults 4 Sagittarii (+4.7)	1:00 AM Venus at greatest elongation (46 degrees West of the Sun)	
10	**11**	**12**	**13**	**14**	**15**	**16**
4:00 AM Neptune 3 degrees North of the Moon	1:36 AM Moon occults 128 Capricorni (+6.6) 4:00 PM Moon at apogee		2:00 PM Mars reaches opposition 11:28 PM Last Quarter Moon	9:00 AM Jupiter in superior conjunction with the Sun		9:00 AM Mercury reaches inferior conjunction with the Sun
17	**18**	**19**	**20**	**21**	**22**	**23**
6:00 PM Venus 1.7 degrees North of the Moon		6:00 PM Saturn 0.9 degrees North of the Moon		3:38 AM Sun reaches Solstice; Summer begins 7:58 AM New Moon 7:00 PM Mars closest.	9:19 PM Moon occults double star SAO 79558 (+7.0)	1:00 PM Cookout & Observing Session 9:30 PM Moon occults SAO 80354 (+6.7)
24	**25**	**26**	**27**	**28**	**29**	**30**
			8:51 PM Moon occults SAO 119392 (+7.3) 11:19 PM First Quarter Moon			