NORFOLK SKIES

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

Volume I; Number 3 March 2001

Meetings And Events For March 2001

Date	Activity
Thu., Mar. 1	**Regular Meeting**, 6:30 PM, at the Golden Corral at Chesapeake Square. Topic for the meeting will be planning future club activities and trips.
Tues., Mar. 13	**Mars Exploration: Imagined Worlds** Sigma Series lecture by K. R. Sridhar, 7:30 PM at the Virginia Air & Space Center. For more info, visit http://www.vasc.org.
Fri., Mar. 23	**Messier Marathon / Observing Session**, weather permitting, dusk until ???, at the home of Glen's parent's home in Gates Co., NC. ***RSVP as space is limited. Call Glen (485-4242) for info and to determine if session will be held.***

Local Planetarium Shows

MUSIC OF THE SPHERES will be shown **Thursdays, March 1, 8, and 29**, from 8 to 9 PM at the Chesapeake Planetarium, 300 Cedar Road. The program sets a demonstration of the motions of the planetarium sky to music. Telescope outing immediately after the show, weather permitting. Admission free. For reservations call 547-0153.

This Year's Close Mars Apparition

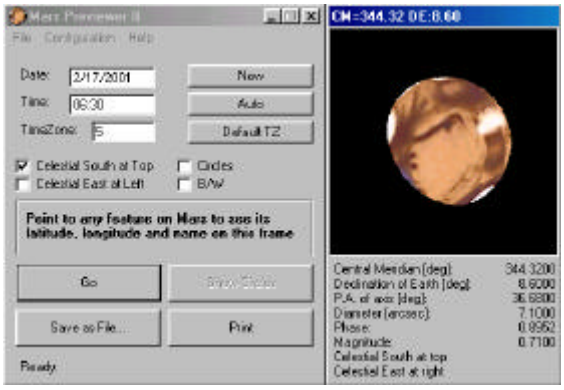
Coming soon to a sky near you will be one of the best apparitions of the planet Mars in recent years. Mars will make its closest approach to Earth on the night of June 21, over a week after it reached opposition. At closest approach this year, Mars will lie only 0.45 astronomical units (AU) or 41.8 million miles away. This is closer than its last 1988 close approach, but even this will be surpassed in 2003 with an extremely good approach of 0.37 AU (34.4 million miles) in late August. The astronomical unit defined as the mean distance of Earth from the Sun or 92.9 million miles.

Oppositions of Mars happen roughly every 779.94 days (2 years 49.44 days), the synodic period of Mars. The synodic period of a planet takes into account the orbital period of the planet around the Sun as well as that of the Earth; expressed another way, it is the time it takes a planet beyond Earth's orbit to travel on average from opposition to opposition. At opposition, a planet is opposite the Sun (behind us) and this is generally the best time to view it because it is also closer. In Mar's case, these close approaches occur 1.5 months later in the year every 2 years.

The orbit of Mars is highly eccentric. In fact, only Pluto and Mercury's orbits are more so. As it works out, Mars reaches perihelion (its closest approach to the Sun) at the same celestial longitude that Earth is at in late August, so any opposition that occurs near that time will be a good one. This happens on average every 15-17 years.

The closeness of approach has a profound effect upon the kind of surface detail that can be seen. At closest approach this year, the disk of Mars will be 21 minutes of arc. In 2003, the size will climb to its near maximum valus of just over 25 minutes of arc, nearly 20% larger! Compare this to the poor opposition of 1997 when the planet was nearer its aphelion (greatest distance from the Sun) and was 0.66 AU from Earth at its best and only 14 minutes of arc. With the closeness also comes an increase in its visual magnitude. So, make it a point to get up early to begin to watch Mars now!

Software Review : Mars Previewer II



Want to know what features you are looking at the next time you observe Mars this apparition? Well, try this freeware program!

"Mars Previewer II" accepts the date and time of observation, and time zone, and then displays a graphic depiction of what the planet should look like. Pointing your cursor over the features in the image will cause the program to display what the feature is. Other data about the planet, such as what central meridian is visible, angular diameter, phase angle, magnitude, etc are displayed immediately below the image. The program was written by Leandro Rios of Argentina.

This program is freeware, and is available from your editor Glen Howell, or you may download it directly as a zipped file **mp201.zip** (3.0Mb) from Sky & Telescope magazine's web site at

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

More Winter Observing in the Florida Keys

By Dave Kratz

The new millennium had finally arrived and the plans for my fourth astro-observing expedition to the Florida Keys were set. Dave Hoffman, a friend from New Jersey had arranged for a campsite on Long Key State Park from January 19th through January 27th. In the meantime, I had obtained a pass to view the January 19th launch of the Space Shuttle Atlantis from the Kennedy Space Flight Center causeway (three miles from the launch pad). I had also made arrangements with my friend in Key West for a seaplane to the Dry Tortugas. This was going to be a great vacation!

A few days before our trip began, however, the Shuttle launch was postponed for several weeks. Thus ending any hopes of watching that event. Admittedly, since I had already witnessed two Shuttle launches, I wasn't that terribly disappointed. This glitch in our plans didn't change our schedule. Thus, after a rather long but uneventful drive we arrived in the Florida Keys on January 19th where the weather provided mostly clear conditions and warm temperature. After setting up our campsites, we drove over to the picnic area, which has an unobstructed view of the southern skies over the Atlantic Ocean, and readied Dave's 12" Meade LX-200 and my home built 10" Newtonian for a night of observing. Unfortunately, the skies had other plans and sent in the clouds to chase us back to our campsite. That weekend proved to be cloudy, windy, and chilly. Did we bring the cold weather with us?

The highlight of the weekend was climbing to the top of the Key West lighthouse (pun intended). Have you ever climbed to the top of a lighthouse and gone outside when there is a 20 to 25 mile per hour wind? Well, it's an experience. Unfortunately, the winds scrubbed the Sunday seaplane flight to the Dry Tortugas. By Monday morning, which dawned cloudy and breezy, things hadn't been working as planned. The weather forecast for the week was uncertain, and we began to wonder if the skies were ever going to cooperate.

Luckily, the skies relented, and late Monday afternoon the clouds disappeared while Dave and I were visiting the Crane Point natural history museum in Marathon. So, that evening we eagerly set-up our telescopes and proceeded to observe until Dave was frozen out around 4:00am. While the temperatures had only dropped to between 50 and 55 Fahrenheit, winds of 20 to 25 mile per hour were making it feel much cooler. On several occasions the winds tried to transport our charts out to sea, but that threat was

ended by using my canned food supply as paperweights. The winds weren't all bad, however, for they checked any trace of dew.

The next night was even cooler and just as windy but Dave was better prepared and we stayed until dawn's early light. I spent much of those two nights observing faint galaxies in the Fornax region as well as open clusters in the southern Milky Way. The best views, however, were of Omega Centauri (NGC-5139) an absolutely wonderful globular cluster which had almost a three dimensional appearance, Centaurus A (NGC 5128) a very interesting galaxy with a very prominent dark lane, and the Eta Carina Nebula (NGC-3372) and its surroundings which are even more fantastic than the Orion Nebula. I also observed the small (2' in diameter), faint and diffuse Comet Utsunomiya-Jones (C/2000 W1).

Wednesday night was mostly clear, but we decided just to run a shorter observing session for the other campers and quit around 10:30 to 11:00 when dew began to form. Thursday night was again chilly, windy and most importantly clear, so again we observed until dawn's early light. I once again focused my telescope on faint galaxies and open clusters, but the most interesting finds were a pair of very nice planetary nebulae NGC-2899 and NGC-2867, and a pair of fine globular clusters NGC-5927 and NGC-5946. I also observed Comet McNaught-Hartley (C/2000 T1) located at alpha = 16hr 8min, delta = 9 degrees 0', which I estimated to have a magnitude of 7.0. Comet C/2000 T1 had a 5' in diameter coma with a slightly brighter stellar nucleus, and possessed a 10' long tail pointing toward the west.

Unfortunately, our run of clear skies was over, as the skies finally deteriorated on Friday. While we tried to do some observing that night, the clouds quickly ended the session. On Saturday, I gave an "Introduction to the Nighttime Skies" talk to the other campers, after which we set-up the telescopes under variably cloudy conditions to show everyone the skies. Amazingly enough, the skies cleared long enough to give some very nice views of the crescent moon, planets and various deep-sky objects.

All too frequently the weather doesn't cooperate with observing plans, but for six nights in January, 2001, the skies were very cooperative in the Florida Keys. Now I have over ten pages of notes detailing my observations of the planets, star clusters and nebulae to transfer to my permanent records. As I've indicated before, if you've been thinking about traveling to the Florida Keys to observe the southern skys, my advice is to stop thinking about it, and just do it. The drive might be a long one, but there's lots of great observing to do from that far south. Indeed, Dave and I are already making plans for next year.

Observing Galaxies In The Great Virgo Cluster

By Kent Blackwell

This month I thought I would discuss some of the galaxies in Virgo. Rather than tackle the entire constellation let’s concentrate on the famous Coma-Virgo Cluster of Galaxies. The objects discussed should be visible in various telescope apertures, ranging from 4" and larger.

The general area is a breeze to find. Center Beta Leonis, then move just a few degrees eastward. You'll bump into some beautiful galaxies, so I shall discuss a few. Being organized in this crowded areas is essential. I've found it best to work from west to east in right ascension. That shall be our basic plan.

M98 - The first object you'll arrive is M98, a spiral galaxy appearing as a beautiful edge-on even in a 4", with a dusty appearance. Be advised with such a telescope it does have relatively low surface brightness.

M99 - The most memorable view of this face-on galaxy I remember was seeing a spiral arm in a 4" refractor back in March of 1990. One rarely sees such detail with a small telescope, so be sure to check this one out.

M100 - A similar sight as M 99, except a bit larger. I am always reminded of M 33, except M100 has even lower surface brightness. I could not detect any spiral shape with a 4" telescope.

M 84 - This 9.3 magnitude galaxy is quite bright and round, even in a 4" telescope. Amazingly, with a scope this size you'll also see 4 or 5 other galaxies in the same low power field of view, and with larger

telescopes you'll see up to 13 in one field of view. This is regarded as the most impressive single field of galaxies visible in moderate aperture telescopes.

M 86 - Just ENE of M 84, M 86 also appears quite bright, and round. I find it to have a very bright core, and even suspected some mottling with a 16" telescope.

M 87 - M87, the brightest member of the Coma-Virgo galaxies, is spectacular, even in a 4" telescope. Although featureless, it is still quite a sight in small telescopes. Be sure to look for the neighboring galaxy NGC 4486 just to the north.

M89 - In a 6" telescope you'll see it is very bright, small and round.

M59 - A very small galaxy, requiring high power to distinguish it from stars in the field. Interesting area though, as M 60 and NGC 4647 are also present.

M60 - The area surrounding M60 and M 59 is one of my favorite, especially at low power. M60 appears double, with NGC 4647 almost in contact. Incidentally, early editions of "Uranometria" labeled M60 only with its NGC number 4649.

M58 - One of the brightest of all in the area, sharp-eyed observers might be able to catch a glimpse of a dark rift . I saw this on the western side with a 12-1/2" back in 1992. Can those of you with 10" or smaller telescopes see this rift?

M90 - As with M58 you might try to detect any dark rifts in this rather large spiral galaxy. I only suspected it with my 12-1/2", and haven't tried it yet with my 16" or 25".

M91 - There seems to be some controversy as to whether or not Messier cataloged M91. Regardless, it is simply beautiful in any aperture, and I have even suspected seeing one of its S-shaped arms in a 12-1/2".

M88 - What a great object. To me it stands out as much as, or more so, than any other. Try comparing it to a good photograph, such as in Mallas & Kreimer's book, "The Messier Album" when looking at it. My notes indicate dark areas visible in a 12-1/2". Have any of you noticed the same?

This completes my brief survey of this very small galaxy-rich area. I've omitted many NGC and IC galaxies sprinkled between all these M-objects. You really have to devote an entire evening's observing to this region alone, as you just can't rush it. A good atlas, with a scale at least as large as Tirion's "Sky Atlas" will be all that's necessary to view at least the brighter members.

Before quitting for the evening check out **M64**, "The Black-Eye Galaxy". Though not in the galaxy cluster, it's only 5 degrees northward in Coma Berenices. I could easily see the dust lane which gives the galaxy its name in a 12-1/2", and have read about people sighting the dust lane in telescopes as small as 4". I wonder if it can be seen in a 3.5" ETX. Are there any ETX owners out there up for the challenge? Let me know if you see it.

It's always fun to express joy, or maybe disappointment of what you see through your telescope. If you're overwhelmed about something you've seen by all means let's chat about it. I encourage everyone to write or E-mail me. I personally answer all inquiries.

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Astrophotography
By Preston Scott Justis

OBJECT : NGC 4826 / M 64
TYPE : Galaxy in Coma Berenices
EXPOSURE: 95 minutes
FILM : Tech Pan 2415 (hypersensitised)
OPTICS : prime focus, 10-inch f/6 Newtonian
DATE : 2/18-19/1994

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

Events Of The February Meeting

Last month's meeting was held Thursday, February 1, 2001 at Pizza Hut, across from Chesapeake Square Mall. In attendance were members Chuck Sawyer, Glen Howell, Dave Kratz, Barry Ferrell, and Shelton Williams. Randy Lassiter joined at the meeting.

After the group devoured two large pizzas, Glen demonstrated some astronomical freeware and shareware software on his laptop that predicted events for Mars, Jupiter, and Saturn. Glen offered his parent's place for the February observing site, weather permitting. Randy asked for help on how to properly setup and use his new ETX-60, and Glen and Chuck said they would try to get with him soon. The meeting adjourned about 9:30 PM.

HB 2026 Gets Tabled in CCT
As reported 02/01/01 By Bob Gent,
IDA Public Relations Officer

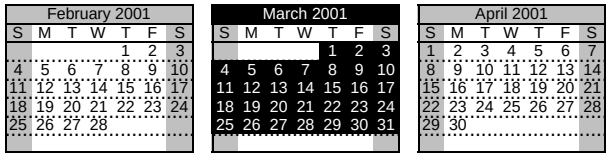
The Cities, Counties and Towns Committee (CC&T) got started a few minutes late. They reached a quorum and began about 8:10 am, this morning. Delegates Hall and Ingram were co-chairmen, and eighteen HBs were being consider. According to co-chairman Hall, all delegates needed to be elsewhere later in the morning, so time constraints were set. Only elected delegate sponsors were permitted to speak as each bill was called.

Delegate Robert Bloxom, the sponsor of HB 2026, was unable to attend the committee meeting. As a result, the bill was "tabled." Later, I called the delegate's office to ask where he was, and his aide said, "He's on the way now." We met in the halls outside the committee meeting room, and I mentioned that his bill was tabled. He said that because of the number of bills being considered, it probably will not go any further, i.e. "it's dead this session."

I shared much news about IDA activities, and we spoke about the importance of enacting Virginia enabling legislation to control light pollution. I gave him copies of several key IDA information sheets and told him we would strongly support future initiatives.

Delegate Bloxom told me that several groups opposed the bill. V-DOT said they wouldn't be able to light highways, and the Retail Merchandiser's Association said we would be adversely impacting safety and security. He had not heard from outdoor advertisers, and I told him to expect their opposition in the future. Lobbyists had already written to the CC&T Committee Chairmen opposing the bill.

Norfolk Astronomical Society Astronomical Calendar



February 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			

March 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

April 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					

All times are EST

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25	**26**	**27**	**28**	**1**	**2**	**3**
				1:00 PM Saturn 2 degrees N of Moon 8:00 PM Regular Meeting	4:00 AM Jupiter 3 degrees N of Moon 9:03 PM First Quarter Moon	5:57 PM Moon grazes Zeta Tauri (+3.0 mag)
4	**5**	**6**	**7**	**8**	**9**	**10**
9:00 AM Mars 5 degrees N of Antares			6:00 AM Venus stationary	4:00 AM Moon at perigee	12:23 PM Full Moon 7:15 PM Moon occults Nu Virginis (+4.0 mag)	6:00 AM Mercury 0.1 degrees N of Uranus
11	**12**	**13**	**14**	**15**	**16**	**17**
1:00 AM Mercury reaches greatest elongation (27 degrees W of Sun)		7:30 PM "Mars Exploration: Imagined Worlds" lecture at VASC		4:00 PM Mars 1.8 degrees S of Moon	3:45 PM Last Quarter Moon	
18	**19**	**20**	**21**	**22**	**23**	**24**
2:00 AM Ceres 0.5 degrees S of Moon		6:00 AM Moon at apogee 8:31 AM Vernal Equinox; Spring Begins	9:00 AM Uranus 3 degrees N of Moon	1:00 PM Mercury 2 degrees N of Moon	4:30 PM Messier Marathon	4:30 PM Messier Marathon 8:21 PM New Moon
25	**26**	**27**	**28**	**29**	**30**	**31**
		5:48 PM Europa/Ganymede Shadows transit Jupiter	11:00 PM Saturn 1.7 degrees N of Moon			7:40 PM Moon occults Mu Gemini (+2.9 mag) reappearance