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Winnicentrics

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Observing Mars with your Newt

by Ken Metcalfe

Well, here are the facts: http://www.tnni.net/~dustymars/2005_MARS.htm
2005 APPARITION CHARACTERISTICS
Mars "has an approximate 15.8-year periodic opposition cycle, which consists of three or four Aphelic oppositions and three consecutive Perihelic oppositions. Perihelic oppositions are also called "favorable" because the Earth and Mars come closest to each other on those occasions. We sometimes refer to this as the seven Martian synodic periods. This cycle is repeated every 79 years (±4 to 5 days) and if one were to live long enough, one would see this cycle nearly replicated in approximately 284 years. The 2005 Mars apparition is considered perihelic, because the orbital longitude at opposition will be only 70° from the perihelion longitude (250°).
Closest approach occurs at 04:21 UT on October 30, 2005 (315° Ls) with an apparent planetary disk diameter of 20.2 arcsec at a distance of 0.464237705619 Astronomical Units (AU) 69,448,972 km (43,153,504 miles. [NOTE: one AU equals 149,597,870 km (92,955,621 miles)]. It should also be noted that closest approach between the Earth and Mars is not necessarily coincident with the time of opposition, but varies by as much as two weeks.
Opposition occurs thirteen and a half months after conjunction, when Mars is on the opposite side of the Earth from the Sun. At that time, the two planets will lie nearly in a straight line with respect to the Sun. About five weeks after that, retrogression begins. Opposition will occur at 08:20 UT on November 07, 2005 (319.8° Ls; Figure 2), with an apparent planetary disk diameter of 19.9 arcsec. Mars will remain visible for over 11 months after opposition, then becomes lost in the glare of the Sun again (October 11, 2006) as it approaches the next conjunction (October 23, 2006). The cycle is complete in 780 Earth days."

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Deadline for the next issue is December 23, 2005

Next Events

We have something new for you. At the last council meeting it was decided to try a new meeting format, so that instead of having three fifteen minute features a break and the main event, we would try giving you five features each night with times varying from fifteen down to five minutes. Here is what we have in store for the next two months.

Friday November 18

The Beginners' session, 7 till 7:20 p.m. is "Using Star Maps and Catalogues" brought to you by Stephen Smyth. At 7:30 the regular meeting begins with a welcome and announcements by Lindsay, followed right away with the new "Lunar Certificate Programme" with Mike Stephens. Then, Gail's "Constellation of the Month", and followed by a new feature in which Jay Anderson tips off the group to significant or interesting events coming in the next month. Jennifer will tell us "What's New", and introduce a picture for next month's "Picture of the Month". It is time for a break, coffee, cookies, and friends, till nine o'clock. After the break, this month's "Picture of the Month" will be presented by our new councilor, Nicole Choptian, a presentation style which can be done in five minutes, the new time limit on "Pic o' the Month". After Nicole Kevin Black will talk to us about the latest in digital astrophotography, using as examples some of his work from the most recent Winnipeg Centre Astronomy Pilgrimage to Arizona.

MEETINGS

Room 118, St. John's College
Beginners' Session 7:00
Regular Meeting 7:30

Friday December 9

We are planning a beginners' Session on "Using Club Telescopes" this month starting at 7 o'clock p.m. At 7:30 the regular meeting begins with announcements, just ahead of Peter Toth who will be following up on his earlier 'Pic o' the Month' NGC talk. Then Gail with a "constellation of the Month", Jay will tell us celestial events of note for the upcoming month, and just before coffee break, Jen shows us "What's New". Right after coffee, Terra will explain a "Picture of the Month", and we go straight to our Main Event, Jay Anderson telling us about eclipses and in particular his latest trip to chase one in Egypt. Out of the lecture hall by ten, and it is Pizza time!

Members' Observing Nights
Glenlea Observatory

Saturday November 19
Beginning at 8 p.m. This month hosted by Jen and Nicole.

Saturday December 10
Beginning at 8 p.m. Hosted this time by Lindsay and Jay.

Looking Ahead to January

You will want to block two dates in January as very important Centre events. On Friday the 13th, (there's no room for superstition in science!), the main speaker will be our National President Peter Jedike. He is a fun and interesting person, with an important position, and an interesting topic (Neutrinos). You will not want to miss it. Then on the very next night, is the Annual Wpg RASC Potluck Dinner Party! What a month!

News in a Minute

The award winning RASC Observer's Calendar for 2006 is now available. Why not pick one up for yourself or for your favourite astronomer? Price - $15.00 They make wonderful Christmas presents!

The Isabel Williamson Lunar Observing Program Guide is now available. Take up the challenge of the RASC'S newest observing program. Price - $7.00

(The above items are available at centre meetings from the Treasurer.)

At our October meeting we elected two new councilors, Ken Metcalfe and Nicole Choptain. Welcome aboard!

Many thanks to Lloyel Hull and Sean Ceaser, whose council terms have expired, for all their work for the Centre during the last 3 years. Also officially elected was Jennifer West to the position of National Rep.

Members' Observing

The following members are working towards their:

Messier Certificates:

Eugene d'Auteuil	41
Murray Rennie	19
Lindsay Price	34
Kris Keller	68

Finest NGC's:

Sean Ceaser	70
Mike Stephens	96

Explore the Universe:

Terra Jentsch	46
Stan Runge	13
Tim Kennedy	35
Judy Starr	22
Ray Starr	21
Eugene d'Auteuil	12
Murray Rennie	6
Sandy Shewchuk	28

Herschel 400's:

Stan Runge	153
Sean Ceaser	136
Mike Stephens	125

Isabel Williamson Lunar:

Mike Stephens	25

If you are interested in using the Warm Room please contact Lindsay Price for a key ($10.00 deposit required). If you would like training on the LX200 Lindsay will be running training sessions, but not on Members Observing Nights. You can contact him at 227-4684 or flprice@mts.net or talk to Lindsay at a meeting.

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If you have comments, questions or concerns about *Winnicentrics*, you can contact any of the councilors or write to RASC, Winnipeg Centre, Box 2694 Winnipeg MB R3C 4B3

AUTUMN AND THE HERSCHEL 400'S

by Gail Wise

Autumn, and the nights are getting dark earlier which means that I can do my observing before I go to sleep. Autumn is another season for galaxies. Pegasus rides high in the southeast with magnificent NGC7331. Large and bright, this is much better than some of his other offerings, NGC7448, NGC7217 and NGC7479. This last has a line of stars pointing right to it but the galaxies are all faint and even using averted vision doesn't help much.

If you like galaxies you'll want to take a look at Cetus. Near M77 I find NGC936 and NGC941. North of his shoulder are three galaxies in the same field! NGC584 is the brightest with a definite nucleus and I think I can see an arm off it. NGC596 is almost face-on and NGC615 can just be seen using averted vision.

Also in the same area as M77 is NGC1055, extremely easy to find beside a naked-eye star. NGC720 is even better, with a bright nucleus and a little "Hyades" star pattern to the south. NGC908, NGC1052, NGC779 and NGC157 are all very big and bright. Being so far south these are a challenge to find but well worth the effort.

Of course, I cannot ignore my favourites, the open clusters. And Cassiopeia is jam-packed with them. It is difficult to point the telescope in her direction and not be rewarded with the sight of a beautiful splash of stars. Some are quite loose, such as NGC1027, NGC637 and NGC559. NGC663 is big and beautiful, very easy to resolve. NGC7790 is slightly nebulous, with millions of stars in the field and another smaller cluster right beside it.

There are a few other observers out tonight and one is engaged in his astrophotography. He sits in his folding chair, which does what is expected of it, causing him to say words which I don't think I'll find in the astronomy books.

Cygnus' open clusters are very difficult to pick out because of all the star fields of the Milky Way. This is where "star-hopping" is a talent I'm thankful I've learned. NGC7008 is an unexpected planetary nebula in Cygnus. It is surprisingly bright but having a bright star right beside it makes it difficult to see. It appears fan-shaped away from the star.

What's nice about autumn is that we can still see the summer constellations so the longer evenings mean more time for astronomy. But, all good things must come to an end, and so must this observing session. The moon is rising so it is time to go home.

Observing Mars *continued from page 1*

And here is the really good news:
"Mars will be 4.9 seconds of arc (arcsec) smaller in apparent diameter than it was at closest approach in 2003; however, it will be 32° higher in the sky for northern hemisphere observers, and that will tend to negate the effects of a smaller apparent diameter."

More good news, there is still lots of time for viewing Mars during one of the best times of the year for viewing! As some recent observation reports by Gerry Schmerchanski. have demonstrated, goods skies and the Oct. 30th close approach is a great showtime for Mars.

Like me, you're likely to take out your Newtonian(s) ;) several times over the next couple of months. Well here are a couple of tips that could help you get the best viewing of Mars through your trusty Newtonian:

1/ As always, confirm your collimation. You'll likely want to see where that sweet spot for magnification is each night. With Mars high overhead and on good seeing nights (steady clears skies), 200x to 300x may be at hand. At that magnification, even with a planetary view, you'll want to tweak the alignment. I suggest doing that earlier in the evening, after cooling your scope while you are waiting for Mars to climb higher. Polaris works great as a test star as it will not drift out of view quickly.

2/ As mentioned above, allow cool down time. Even a 6" mirror benefits from 20-30 min. when moved from the house to outside, especially as the fall temperature drops. Oh, and dress warm with lots of layers and warm boots! Look on the brightside – no mosquitoes!

3/ If you are handy and want to spend the time, consider "flocking" the inside of your tube, particularly the opposite side of the focuser. Take a look inside your tube; shine a flashlight along the wall. Despite a flat black paint, you'll likely see a "reflection" from the surface. In an ideal tube, all light hitting the tube would be completely absorbed, preventing any stray light from making its way to your eyes. By reducing stray light you can improve the contrast. This is likely one of the top 2 or 3 things you can and should do to improve the views from your scope. Best yet you can do it yourself at a very nominal cost. (Search the web and ask around.)

4/ Here's a trick that is really cheap. It is best on larger mirrors 8" and up. Make an Off Axis Mask. All it takes is some cardboard, tape and a pair of scissors. Most Newtonians have straight spiders holding the secondary. This naturally divides into quadrants. Taking a circular piece of cardboard, cut out a piece equivalent to one quadrant. Now try viewing Mars from each quadrant carefully noting the view from each.

With bright objects, you don't always need all the light available, hence solar and lunar filters. You can trade off the amount for "quality". No two things are identical and in the case of your mirror, different areas on the mirror perform differently. By unmasking one quadrant at a time you will find the one that gives you the most pleasing image of Mars or any bright planet or the moon. You should retest for different objects and magnifications. The frequency (colour) may perform differently. Also optical mechanics may cause varying results when changing magnifications.

Clear Skies

A Birds Hill Park Story

by Gerry Schmerchanski

It was getting dark pretty fast. The public was strolling along from telescope to telescope looking at globular clusters, ring nebulas and double clusters. Mars was up, but not high enough to train a telescope on it. I was spending time checking up on my scope's target, epsilon Lyra, while keeping an eye on my binocular mount. There was a young woman standing by the binoculars, facing east, but not looking through them. I walked over to check that the Pleiades were still in the field of view in the binocs and lowered them so that she could have a look. "It's called Subaru in Japan" I said, thinking she might appreciate the relevance.

"Yes, Subaru...." She said.

"So many stars...." she said with her voice trailing off. " Please, may I see Mars?" she asked. I swung the binocs over to Mars low on the eastern horizon.

"It's not going to look like much as it is just a tiny dot at only 15 power." She started looking and I walked back to my scope and let her look at Mars thinking she'd give the bright orange dot a quick look and move on. After checking my scope I looked up to see her still looking at Mars, which must have drifted by now. I walked back and she started telling me how it was so colourful and how it would shimmer and dance. I explained to her how planets and other objects appear when looked at through so much atmosphere. She seemed to understand that, but it didn't tarnish her appreciation of what she saw. It's just a shimmering dot, I was thinking, perhaps she was just being encouragingly polite.

"Please, can I look at it again? It has moved out. " I recentered the image and she looked at it again. She was almost bouncing with excitement. She then looked up at me smiling saying that it is, "...quite wonderful". Now I was starting to think that she was seeing something I wasn't.

"Have you looked at Andromeda yet?" I asked.

"No, where is it?" She asked. I pointed out where in the sky it was found and then showed her what it looked like in the binoculars. Andromeda is best looked at with binoculars. I started to tell about how it was an island of billions of stars much like our Milky Way galaxy. When I mentioned that the light reaching her eyes took over two million years to get here she gasped, but then immediately saw the problem.

"So what does it look like now?"

I started to tell her that from what we know about galaxies it probably looks quite similar and that 2 million years is not all that long in the big scheme of things.....

"It may not be there anymore!" She exclaimed.

"It might not." I agreed. We talked about the enormity of the universe. It was then that I noticed Sean standing behind us and he added:

"When the light left that galaxy, horses were just tiny and man was just getting out of the trees." he explained. With all of that sinking in she decided she wanted to move on to see more exciting
things and she hurriedly folded her hands together and gave a quick bow of thanks and then bounced, no, literally, she skipped off, to look at another telescope. Sean and I were left there grinning in the dark, wondering what had just happened here, and he added.

"I really like public star parties..."

I agreed and then after a bit, I went back to look at the tiny fuzzy image of Mars shimmering away in the binoculars. I was looking to see if I could see what she had seen. I think I might have seen Mars that way, a long time ago, and I like to get that back.