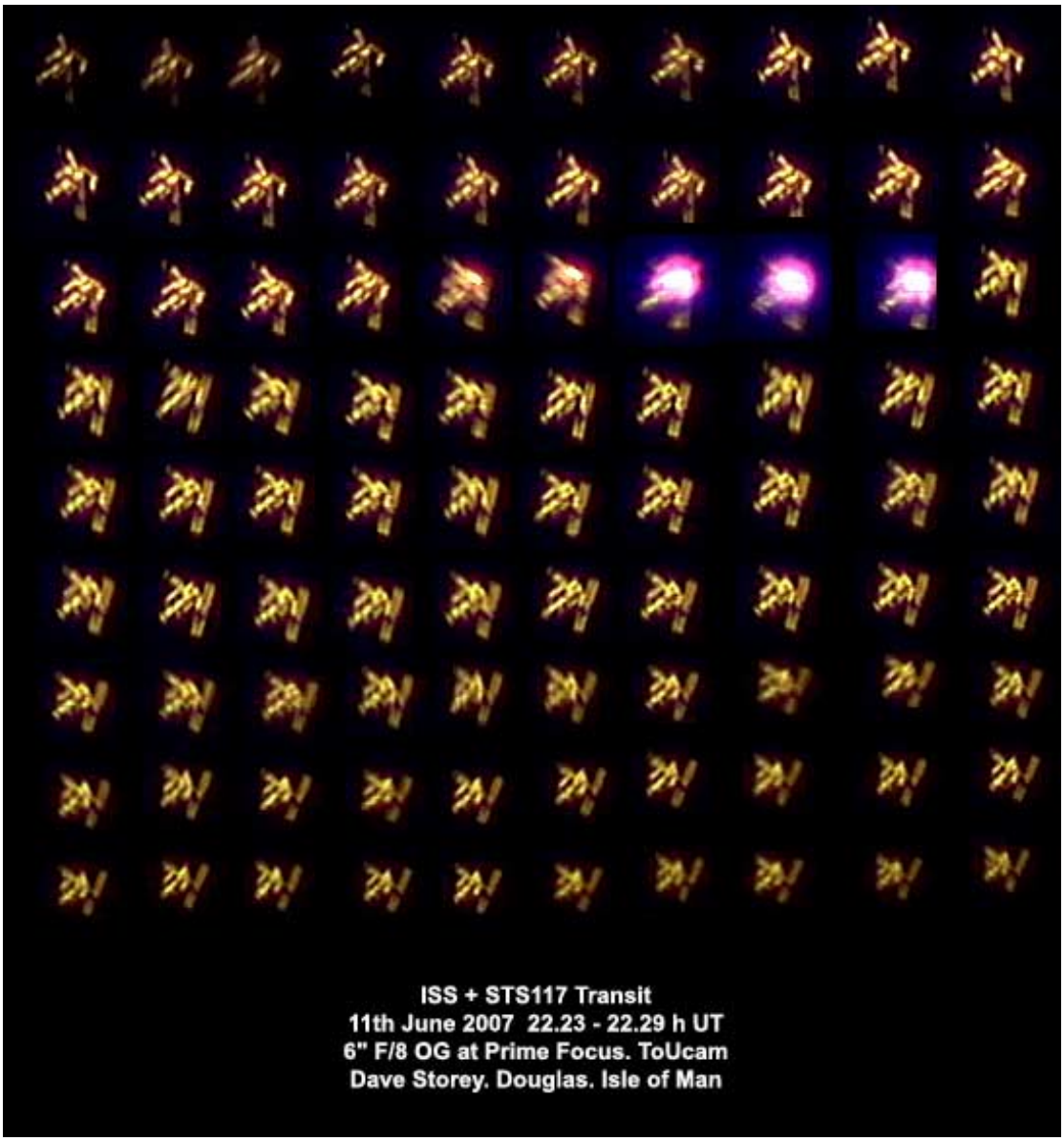
Newsletter Summer 2007

Volume 3 Issue 3



Editorial

As you may know, the site of the current observatory was formally occupied by an observatory that was used by the late Henry Soper. Henry did have his observatory registered with the Minor Planet Center (MPC) of the International Astronomical Union (IAU) and the observatory was assigned a code number 987. If you look for references to the code 987, you may find it listed as "Archallagan Observatory". At a formal IoMAS meeting a while back, it was decided to rename the observatory following its complete rebuild and is now officially called "The Isle of Man Observatory". The MPC has now changed the observatory name to reflect this. In order to ensure that the observatory keeps its code number, I recently carried out some astrometric observations of a hand full of asteroids and these where formally processed by the Minor Planet Center. It is my intention to carry on doing astrometric work on asteroids and comets from the observatory and feed information to the MPC for professional use. Astrometric work is the process where objects in the sky are photographed and very accurate positioning of the object is made. This information is used to check for collision threat of the target object with the earth. Some positional data can be used by space craft trajectory planners as well, so the IoMAS observatory will be producing practical information.

Chairman's Report

For astronomers, the Summer is always a time for a bit of a breather as the night sky never really gets dark enough for any decent observations, so it is always a good time to service and clean up the telescope and other equipment. Having said this, it is a fact that 2007 offers some excellent viewing highlights for us with Venus absolutely dominating the Manx Western sky after sunset. During TT I noticed that Venus was visible well after 11.00pm and was in fact visible after midnight making it an evening star visible in the morning! Last month was off the Island then we had a stunning conjunction of Venus and the Moon and the two were so close it looked a bit like the Turkish flag. Also coming up fast is Jupiter which is going to be visible all summer in the South East and thus rivalling Venus to an extent, so even thought the skies are light these two in particular will dominate our skies for quite some time. Venus will actually go through Inferior conjunction on my birthday (August 18th) and will re-emerge as a proper morning star in September.

Whilst most astronomers take a bit of a breather in summer, not so our leading observer Dave Storey, who at the June meeting showed us some stunning images of the ISS and the Shuttle Atlantis, that he managed to acquire a few days earlier. Great images Dave, and thanks for giving us the opportunity to see them. (See front page). I am always delighted to receive any images at all from members of an astronomical nature, be it what you have seen or places you may have visited. I cannot stress enough the monthly meetings are for YOU, so any contributions will always be gratefully received. All I ask is that you let me have them in good time to be able to include them in the meeting. Just email them to me at howardparkin@manx.net, and I will do the rest.

In the March meeting we tried a different idea for the meeting and had a "workshop evening" this went very well, and we are in the process of putting together the 2007/8 programme so I am asking for any suggestions, offers of speakers or anything that you as members would like to see.

Until our next newsletter, keep your eye on the sky and your dreams even higher

Howard

Newsletter Production Help

Having produced this newsletter now for nearly three years, I would like to offer my request for help in the production of the newsletter. I would ask if there are any society members who feel they could contribute to the running of the society with producing the newsletter. I am talking here of only assembling the articles into the newsletter and not actual article writing. Actual layout of the newsletter may also be designed by the compiler as from volume 4. Please email if this is up your street for more info. dave.storey@iomastronomy.org

Email Addresses

In order to keep the societies email addresses up to date, could I ask that you send an email to the secretary James Martin and also copy in Dave Storey. Email addresses will only be used to send details about IoMAS activities. Any addresses will not be supplied to anyone for any purpose.

Newsletter By Email:

If you prefer to receive future newsletters by email instead of black and white paper copy, please let Dave Storey know. Also, all newsletters are posted on the member's only page of the IoMAS web site.

Skywatcher Mercury 707 Refractor. **Telescope review by J. W. Martin**

This is a cheap beginner's telescope with 70mm object lens and a 700mm focal length, making it an F10 telescope on a simple altazimuth tripod. Cost is £69.00 plus P&P.

I have recently purchased a new Skywatcher Mercury refractor telescope. The reason for my buying it was to use the optical tube assembly as a guide scope for auto-guiding my 10" Meade Lx200.

The guide-scope which I previously had attached to my Meade was a cheap kid's 50mm refractor of mediocre quality. The decision to upgrade this was reached during my attempts to photograph the close passing asteroid 2006 VV 2. Finding a guide-star was very difficult with the rubbish 50mm – "that was it!" - I was not wasting any more time on it.

After much thought and internet searching I settled on a purpose made guide-scope which was the 70mm F10 made by Astro-engineering. I even ordered it from our local supplier Morrison's Photos, to be told that it was out of production. Having decided on the 70mm F10, I found the most suitable alternative to be the Skywatcher Mercury. This had the added bonus that it was £100.00 cheaper than my original choice and would fit comfortably into my existing Astro-engineering guide-scope rings. The aluminium tube is more rigid, and superior to the plastic tube assemblies which are standard on lots of the rival scopes of similar price. The 1.25 inch eyepieces were essential so that my auto-guider could fit onto it. As I only required the tube assembly, the tripod was not important to me, so I went for the cheaper alt/az version.

The best deal I could find was at Sherwood's priced at £69.00. One drawback: P&P cost £20.00 first class mail.

When the telescope arrived I was really impressed with its quality and value for money; I think it is a lot better than some of the "toy" telescopes that are often sold to beginners for a lot more money.

The telescope was well packed in a stout cardboard box, inside which was a pleasantly illustrated presentation box. Inside this was a white cardboard box with three compartments, all components carefully wrapped in bubble wrap with protective tissue paper around the parts.

The telescope was remarkably easy to assemble. The tripod is of stout and firm construction, with sliding bars for height adjustment. There is an accessory tray which can be fitted on the tripod with three thumb screws. The altazimuth fork mount is a very solid one piece casting with no wobbly bearings.

The tube of the telescope slots into the fork pivot and is held in place with two turnbuckle screws. The only warning I would give here is to be careful not to cross thread these screws into the holes as one of them was a bit tight to start off.

There is a sliding rod from the optical tube to the fork mount which acts as a strut to clamp the altitude axis, and a threaded knob which can be used for fine adjustments. The azimuth bearing has a clamping screw which can be used to control the drag on this bearing.
The optical tube assembly has a lovely metallic blue finish with the Skywatcher logo on it. There is a large plastic dew shield and lens cover with a small central lens cover for stopping down the aperture.

The focuser is of the rack and pinion type and is well made with no flexing. The motion is tight, yet smooth to operate. There is a screw for locking the focus position; this will be useful for leaving it set in the correct poison for my auto-guider. The end of the focus tube has a T thread for fitting cameras etc.

The small finder-scope fits to the main tube with two knurled screws. The finder has clear cross-wires inside and the focus is adjustable. There is a good clear wide field of view; alignment is by a single set of three screws. A useful peephole sight is incorporated into the finder mounting bracket for rough aligning.

With the telescope come two eyepieces: a 25mm, long eye relief, kellner, and similar 10mm one; both eyepieces have rubber eyecups for comfort.. There is also a neat 2X Barlow lens and 90 degree star diagonal to complete the set. The eyepieces in combination with the Barlow lens will give you a good selection of magnifications, plus the bonus that they are 1.25 inch

diameter, not the stingy "Mickey Mouse" 0.96 inch ones that often come with other beginner's telescopes. Tools included are a small cross screwdriver and hexagon spanner come screwdriver.

The instruction booklet gives assembly instructions for several telescopes in the Skywatcher range and some observing tips for beginners. I was particularly impressed with the sun warnings, which are crucial for anyone starting out.

Now to test the optics: I set the telescope up to view the surrounding countryside. The 25mm eye piece gave clear crisp images; the 10mm was OK but gave a smaller field of view than a Meade eyepiece of the same focal length. Bear in mind however, the Meade eyepiece alone would cost much more than the whole Mercury package; so the small improvement in image quality would not be worth it if you did not already own one. There was a bit of colour coma around the outline of dark objects against a bright sky, but not bad for the price of the telescope. The 90 degree star diagonal is of good quality and makes viewing the sky much more comfortable. With the star diagonal the image is the right way up, but East and West are reversed.

Viewing the Moon gives a good clear image; the field of view is quite wide, the Moon just fits into the field of the 10mm lens; with the Barlow the details of the craters stand out. Saturn's rings can be clearly seen, although the image is quite small. I dare say one of the Skywatcher models with a longer focal length would give a higher magnification. Stars look bright and distinct with excellent views of star fields. In the 25mm there are no noticeable distortions at the edges of the field of view. Venus shining at mag -4 shows a gibbous phase in the 10mm, colour aberration is seen on the limbs because of its brightness, but this was to be expected.

Now having tested the telescope I really felt hard of taking the tube off, but this is why I bought it, so I removed it from the tripod took the finder off and fitted it to the guide-scope rings of my Meade - it looks splendid.

I have tested it using the webcam on it to image the moon and it works well giving a much wider field than the Meade. I even had Saturn and the moon in the one shot an hour after the occultation. I have yet to test it auto-guiding, but believe it will work well. I any case I have an extra wide field telescope for viewing star fields, two extra eyepieces, an extra Barlow lens and a firm tripod as a bonus.

The conclusion that I have come to is that many a youngster would be delighted to get something like that for a present; I know I would have when I was first interested. For its price you would not get better value.

Skywatcher also make larger refractors and reflectors, both equatorial and altazimuth; some of them with motor drives. If they are all as good as this small telescope they are worth investigating.

Choosing a telescope is a personal decision, so I would recommend potential purchasers seeing one in action before investing your cash. Members of the IOM Astronomical Society are always willing to show their telescopes to anyone interested. If you want to see the Mercury, you are welcome to pop in to Ballaterson Farm Observatory for a look.

Meetings

Listed below are the planned meetings at the observatory. The meetings in *italics* are for groups outside of the IoMAS, but any member is allowed to attend these meetings where you may help with the visit, or just use the telescopes. Note these meetings may change at short notice. Contact the host of the meeting to confirm. Also, see the IoMAS website as this has a page that is continuously updated.

5th July "The Gas Giants" by Jonathan Gordon
19th July Committee Meeting
2nd August Monthly Meeting with summer BBQ
16th August Committee Meeting
6th September "Ice in the Solar System" by Gary Kewin
13th September Committee Meeting
20th September AGM. To Be Confirmed.

The Manx Night Sky. July-September 2007

All times are Universal Time (UT) Note: BST = UT+1 hour

Moon

New	**1st Qtr.**	**Full**	**3rd Qtr.**
14th July 12.04hrs	22nd July 06.29hrs	30th July. 00.48hrs	7th July 16.54hrs
12th Aug. 23.03hrs	20th Aug. 23.54hrs	28th Aug. 10.35hrs	5th Aug. 21.20hrs
11th Sept. 12.44hrs	19th Sept. 16.48hrs	26th Sept. 19.45hrs	4th Sept. 02.32hrs

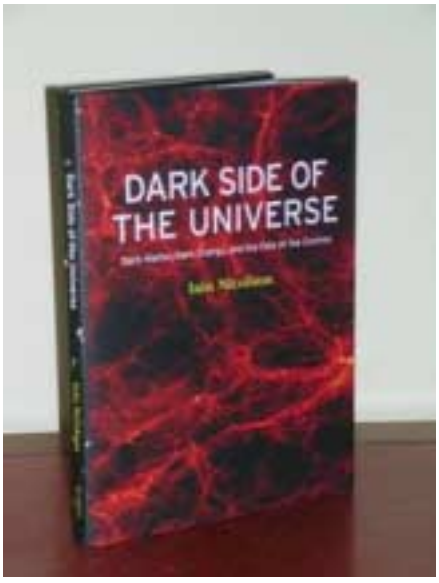
Lunar Occultation's: (Stars brighter than magnitude +6.0)

Date	Time (h.m:s)	Star	SAO#	Magnitude	PA	Type of Event	Notes
5 Aug	23.29:10	ZC399	93062	5.7	286	RD	mu Aries
7 Aug	00.53.34	ZC537	76131	3.7	222	RD	Electra, Pleiades
7 Aug	01.00:46	ZC536	76126	5.5	260	RD	Celaeno, Pleides
7 Aug	01.08:48	ZC539	76140	4.3	292	RD	Taygeta, Pleiades
7 Aug	01.23:42	ZC542	76159	5.8	301	RD	Astrope, Pleiades
7 Aug	01.25:22	ZC541	76155	3.6	259	RD	Maia, Pleiades
9 Aug	02.41:16	ZC890	77675	4.6	274	RD	136 Taurus
22 Sept	23.59:12	ZC3031	189667	5.9	121	DD	17 Capricornus
29 Sept	19.54:04	ZC440A	75673	5.2	290	RD	epsilon Aries

Times are UT as seen from IoMAS Observatory. Start to observe these events about 5 minutes before the above times to allow for differences in your latitude and longitude. This will give you time to locate the star that is about to be occulted.
ZC = Zodiacal Catalogue. Type of Event DD = disappearance at dark limb, RD = Reappearance at dark limb.
PA = Position Angle around limb of the Moon, where 0 degrees is north, 90 degrees is east, 180 degrees is south and 270 degrees is west.

Planetary Highlights

Venus can be found very close to planet Saturn at the very beginning of July with a very close pass as seen in binoculars. Venus is setting soon after sunset during July as it moves ever closer to the inferior conjunction of the sun on 18th August. The planet will look crescent phase through a telescope and will be very bright at magnitude -4.4. After conjunction, it will emerge into the dawn sky and the crescent phase will gradually increase in thickness as the planet swings further away from the sun.
Mars is starting to become more prominent in the morning sky as it moves in its orbit, getting ever close to earth. Still, it won't show much detail upon its surface as seen through a good telescope due to its small size. We'll have to wait until November to get any chance of easily seeing surface details on Mars.
Jupiter dominates the southern evening sky during July and will be the brightest 'star' in the sky once we loose Venus after sunset. The altitude of the planet will affect the quality of the image you can get through a telescope, but its worth looking at as the size of Jupiter always allow some cloud details to be seen.
Saturn as mentioned in the Venus notes above is now setting soon after sunset during July as it moves nearer the sun as view from earth. The planet reaches superior conjunction (far side of the sun) on 21st August after which date, it will move into the morning sky.
Meteors: The **Perseid** meteor shower is the highlight this session and we can expect up to about 80 meteors per hour during maximum on 13th August. Unfortunately, this occurs during daylight hours from the IoM so expect much less during the evening of the 12th August.



Special offer to members of IOM Astronomical Society

This book on Dark matter, Dark energy and the Big Bang follows on very well from the excellent talk given by Richard Shafto to the Society. If you found that talk interesting this book supplements Richard's talk nicely.

20% off published price £18.00 per copy including postage

Following the success of the previous offer made by Canopus for the Canopus Encyclopaedia of Astronomy, you may wish to take advantage of their latest offer.

This book is of very high standard and beautifully illustrated.

If you wish to see a copy before you buy, there will be a copy on display at the next few meetings of the Society.

Please let me know if you would like a copy so that as many of you as would like one can take advantage of the offer.
The publishers would like all books required sent in one batch to save costs.

You may order your copy by contacting me at the society meetings or by phone 842954 or e-mail ballaterson@manx.net

All savings are being passed on to you at no cost or profit to the society.

Regards James Martin. Secretary

"For anyone who was intrigued by Bang! *Dark Side of the Universe* is the perfect way to delve deeper into 21st Century Astronomy."

Brian May

"If anyone can light up our dark universe, Iain Nicolson can"

Sir Patrick Moore

YET another book on dark matter and dark energy? Well, yes and no. This one, by veteran astronomy writer Iain Nicolson, manages to cover a large amount of material, from the neutrinos, WIMPs (weakly interacting massive particles) and MACHOs (massive astrophysical compact halo objects) that might make up dark matter - if it exists - to the alternative theory in which modified gravity takes the place of dark matter (MOND), from the birth of the universe in the big bang to its possible ugly demise in a big rip. Full of lavish illustrations in beautiful colour - though not of course of dark matter and dark energy - it is a first-class overview for the non-specialist, with enough meaty detail for scientists too.

The book is written with a masterly touch and illustrated throughout with a magnitude of pictures and explanatory graphics. It is a superb synthesis of modern knowledge, expertly interpreted and presented.

Marcus Chown, New Scientist

... should be on the bookshelf of anyone interested in astronomy.

Stuart Clark, Astronomy Now

The story of the Big Bang and the universe we think we know is based on observations of the matter that we can see. Amazingly, this turns out to be less than a tiny 2% of the matter that actually exists. More than 98% of all the matter in the universe is dark. It emits absolutely nothing. Astronomers only know it is there because it exerts a gravitational pull on visible matter.
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DOME PHONE
464926

Please ring the Dome Phone on any clear night. There should be a committee member there if you're lucky. If you don't get an answer, please try any of the above committee members that have **(KEY)** next to their name to see if they plan to do some observing. They should be able to try to get the observatory open for you. If you know in advance what you plan to observe, again, ring the above committee members to arrange an observing session.

This newsletter has been very kindly sponsored by "The Office Equipment Centre" Douglas. Isle of Man.