

COSMOS NO 7 - Newsletter of the Hebden Bridge Astronomy Society - A Section of the Hebden Bridge Literary & Scientific Society

EDITORIAL

The theme of this, the 7 th issue of Cosmos , is to reflect what some of our members get up to in the Summer and early Autumn ‘ gap’ prior to our next club ‘season’.

Greece , Harrogate , Barcelona Edinburgh and Thetford Forest are all on this travelogue menu . Many thanks to our contributors .

Please help both myself and our Webmaster by providing material for future issues of Cosmos and new material for the HBAS Website. Drawings , book reviews , photographs , articles on construction of astro kit and accounts of lectures attended are all grist to the mill .

Len Entwisle (Editor)

PAUL YATES SUMMER GRECIAN IDYLL

From last Cosmos you may remember these words from Paul :-‘ In June 2001 Mars is at opposition – as it is every two years. Around June 22nd it will be at magnitude -2.4 and 20.79 arc seconds apparent diameter. Great news for planetary buffs, but not so good news if observing from our UK Latitude. Home in Oakworth, it will only skirt about 10 degrees above the horizon – if the weather is kind enough to see it. Even then, it is likely at that altitude the seeing is so bad the view will be poor whatever telescope one can muster. Now from southern Greece for example, the prospects are rather better. At this location, Mars will attain an altitude of around 27 degrees with much better prospects of good seeing, and it is almost certainly to be clear every night. The planet will be located in Sagittarius, virtually above Scorpius which will be completely visible, unlike back home where it can never be seen in all it’s glory’.

Paul and his family made the trip to Greece and his account follows :-

Back at last, got away with a mere three hours flight delay on the way back and, rather lucky I think. Here are a few notes of my observations. Saw Comet LINEAR A2 every morning from 24th to the 30th. Always at around 4th mag and just visible with naked eye at highest. Excited to see it at first, but it never actually changed - well hardly. It looked like a large globular with no tail but an extended coma. Nice to track it's movements every morning but would have been nice if it did something. Kept reminding myself to make the most of a 4th mag comet !! Charles Morris, on his web site, has described it as the most boring 4th mag comet he has ever seen, ha ha.

Mars was great, good to see such a large disk with easy to see markings, and at 30 degrees altitude. I was even tempted to do some drawings. I always used a 23a filter and it always improved the view, which surprised me using only a 90mm telescope (the Takahashi). It would have been nice to have had an even bigger scope.

Generally, sweeping with the Tak at low power was a sheer joy, the views of the Milky Way right down into Sagittarius and Scorpius were out of this world - if you know what I mean. So many wonderful vistas.

Some areas looked like a photograph of star clouds, really superb. Also all those lovely deep sky objects we only see low down or not at all up here ! Having a 2.5 degree field was wonderful. One of the most memorable sights funnily enough was M31 (the Andromeda Galaxy) and it's two companions. I was quite stunned how it looked at x20 and also at x33. It extended to the limits of the 2.5 degree field and beyond with detail in the outer reaches at x33. With all the foreground stars as well it was a wonderful sight. I looked at it every morning it was so nice. If folks could see it like this it would be everyone's favourite galaxy.

The Helix was easy without a filter, though of course more detail in UHC.

The Veil Nebula in Cygnus was another stunner. I could see the large arc on it's Eastern edge, not the 52 Cyg bit, without any filter which I wasn't expecting at all. It was quite clear and distinct. With the UHC I could see all of its constituent parts.

M33 in Triangulum was very easy as you'd expect, very nice.

I think M7 and M6, open clusters in Sagittarius are absolute gems seen with a wide field and at a reasonable altitude. I don't think I would actually manage to see M7 (most southerly M object) from the latitudes of Yorkshire. What a shame !

The globulars M22 and M4 are also stunning at higher altitudes and in a dark sky, I think M22 would be at least as good as M13 if it was as easily seen. I spent some time on M24 as it looked just like what it is, a huge star cloud, also enhanced by some of Barnards dark nebula superimposed on it.

Seeing the Milky Way arching from horizon to horizon in all it's glory combined with all the wonderful wide field vistas in the Takahashi really gave a feeling of what the milky way really is, a real insiders perspective. It was quite humbling really. This, and the views of M31 put the universe very much in perspective.

I also took the chance to see Uranus, Neptune, and the asteroid Irene which was on view.

(Fancy naming an asteroid after the wife!!)

Went up a hillside one evening and did manage to see Omega Centauri very low down over the sea, a matter of three or four degrees at most. Not the best view in the world, but what a monster it is compared with every other globular. I just want to see it now at a reasonable altitude in a dark sky, it must be phenomenal.

M8, the Lagoon Nebula, was also a stunner (over using this word a bit, sorry!). The detail it showed was marvelous. I think it's more interesting than the Orion Nebula , just a shame I can't see it well from home.

Venus was high in the sky before dawn and the Pleiades in a dark sky, ahhh. Well these are some of the things that come to mind, other objects galore, clear every night as you'd expect and very hot indeed. Also, a black sky, not twilight, from 10.30pm until after 4.30am.

One objective I have now is a visit even further south to get a good view of the Eta Carinae Nebula, probably the deep sky grand daddy of them all. I reckon a visit to somewhere at least 10 degrees south one March or April should do it.

Ah, I feel another expedition in the making!!

Bye for now, Paul

Alan Chapman on Copernicus - A Lecture account by Derek Haslam

At the end of June a substantial contingent from the Hebden Bridge went to Harrogate to hear Dr. Alan Chapman speak about Copernicus. The venue was a modern, well-appointed Friends' Meeting Hall with the local orchestra practising in an adjoining room but, once the talk began, there proved no distraction. A scientific historian and Fellow of Wadham College Dr. Chapman is a gifted and compelling speaker who convincingly placed Copernicus (to give him his original, Polish name) in the context of 16th century science.

A number of old chestnuts were soon dismissed: the notion that astronomy was neglected during the Middle Ages, for example, or that Copernicus revolutionised existing theory by ousting the geocentric universe of Ptolemy for a "new", sun-centred one. The idea of placing the sun at the centre is as old as Aristarchus of Samos (3rd century BC). Copernicus's achievement embodied in his masterwork, *De Revolutionibus of the Heavenly Spheres*, was to make practical use of a sun-centred model to explain the oddities of planetary motion (the so-called planetary loops) and to produce tables which were more accurate predictors of planetary position than those of Ptolemy.

We also learned something of mediaeval universities and the type of education which took place in them, of how the study of astronomy and mathematics in the universities of Italy (where Copernicus studied) was stimulated by the flow of books in Greek and Arabic from the Eastern Mediterranean, which became a flood after Constantinople fell to the Turks in 1453. This was the Renaissance and Dr. Chapman successfully conveyed something of the excitement among learned men of that period. A memorable evening altogether; I hope to hear Dr. Chapman again sometime.

LEEDS ASTROMEET

2001 Saturday November 10th - A grand day out !!!

Once again the Leeds Astronomical Society puts on a full day astronomical event at Centenary House in the centre of Leeds. The entrance fee is £ 5, paid on the door (open to the public from ca 9.00 am) and the lectures are as follows :-

Dr Allan Chapman (University of Oxford) - ' Reverend Thomas William Webb and the popularisation of Amateur Astronomy '

Andrew Elliot (BAA Merlin Medal Winner 2000) - ' Video Astronomy '

Dr Andrew Hollis (Director of Asteroids & Remote Planets Section of the BAA) - 'Near Earth Asteroids and the Earth '

Dr Monica Grady (Natural History Museum) - ' Meteorite and Mars '

Professor John Parkinson (Sheffield Hallam University) - ' 11 th August 1999 - A sideways look back at Britains Eclipse '

In addition to the lectures various trade stands are present so books and optical kit should be available. Refreshments are available within Centenary House or guidance can be given to additional local establishments.

Viva L' España - Especially Catalonia by LE

Just before the August Bank Holiday 2001 three northern UK amateur astronomers flew out of Manchester Airport headed for Barcelona and a taxi ride of some 20 km to the University town of Sabadel . This town was to be our home base for some six days as we attended ESOP XX (the 20 th European Symposium on Occultation Projects) over the first weekend followed by a social program over a further three days .

An occultation is- ‘ The passage of one astronomical object directly in front of another so as to obscure it from view as seen by a particular observer’ - Source - Penguin Dictionary of Astronomy by Jaqueline Mitton . It follows that solar eclipses are covered together with the disappearances and reappearance’s of stars as the moon moves eastward against the star background . In addition to this asteroids at times pass in front of stars and then observers under the limited width occultation track can provide fresh knowledge of the size and shape of these minor planets.

The picture below is of a model of Fabra Observatory on Mount Tibidabo , above the city of



Barcelona . We were invited to visit this observatory on the Friday night of our arrival .

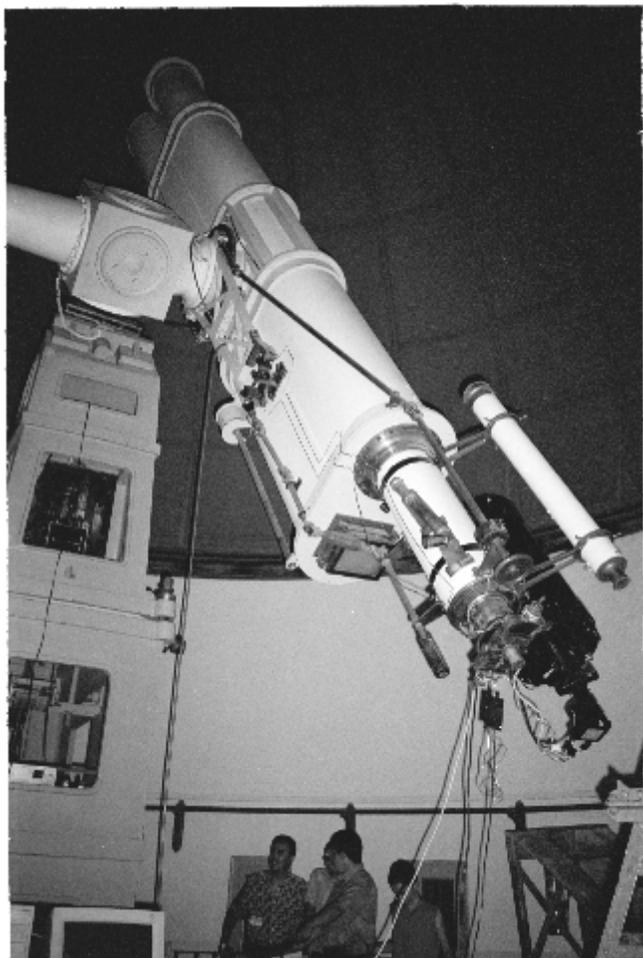
The dome houses twin 38 cm astrographic refractors with a 16” Celestron fixed alongside for CCD work . Astronomically the observatory carries out positional work on asteroids and comets together with occultation work .

The observatory carries out both meteorological and seismological monitoring either on-site or by receipt of telemetry from out- stations. Some of us crossed from a door in the side of the dome across to the meteorological station (luckily in the dark so we were not aware of the roof slipping off steeply to both sides of the low parapets of the walkway and the 90 foot drop below !). The wobbly bit at the met station end turned out to be the observing slit for the transit telescope (once used for the time service) .

This observatory can be visited by the public . It does have somewhat unusual surroundings with the summit of the mountain above it crowned by the floodlit Church of El Sagrat Cor . Just below the church and above the observatory is the oldest amusement park in Spain , created by, Dr Andreu , a chemist . Unfortunately this fairground park is lit up like the proverbial Disneyland

Christmas Tree !!!!) and to compound the felony a large (very) television mast is also present nearby . Apparently the amusements are not open all week so perhaps the illuminations are turned off at times ?

One route out from Barcelona itself to the observatory follows the Avinguda del Tibidabo to the ‘La Font del Raco Park’ where a Modernist building houses a Science Museum and Planetarium . From here the avenue ends in the Placa del Peu del Funicular which gives an option for transport up the mountain . I certainly could enjoy a long weekend or even a week in the surroundings of Barcelona at some future occasion .



The two days of scientific papers of the symposium covered such topics as GPS for support of Grazing Occultation Expeditions , The GAIA Mission , Lunar Occultation Workbench , The use of Audio Spectral Analysis to aid occultation timing etc . The attendees came from Belgium , Czech Republic , France, Germany , Italy , Poland, Spain , Switzerland , Netherlands and the United Kingdom .

On the Saturday night we visited the host associations Agrupacion Astronomica de Sabadell Observatory . This is a modern white painted three storey building in a municipal park with a dome at one end of the building and an excellent library on one of the floors. To see the kit that is available here I would recommend that you visit their website where you will see facilities which include a 500 mm f/4 Newtonian which is switchable to an F 15.6 Cassegrain with attendant parallel mounted 162 mm f/12.7 and 102 mm f/15 refractors and a 200 mm Newtonian .

Visit <http://astrosabadell.org/sahome.htm> to find out more

A discovery in their library was the book 'Realisez votre Telescope ' by Karine et Jean-Marc Lecleire which is prefaced by Jean Texereau and published by Lecleire . It is a new and detailed well illustrated guide to the construction of amateur telescopes (and mirror making) .

After some general coverage some specific projects are dealt with . These cover a 130 mm Dob , a 250 mm Fork mounted driven Newtonian and a 300 m F/12 Cassegrain . They are intelligible in French to a Tyke but would be worthy of an English translation for a wider audience. I bought the book through Amazon France on my return home !

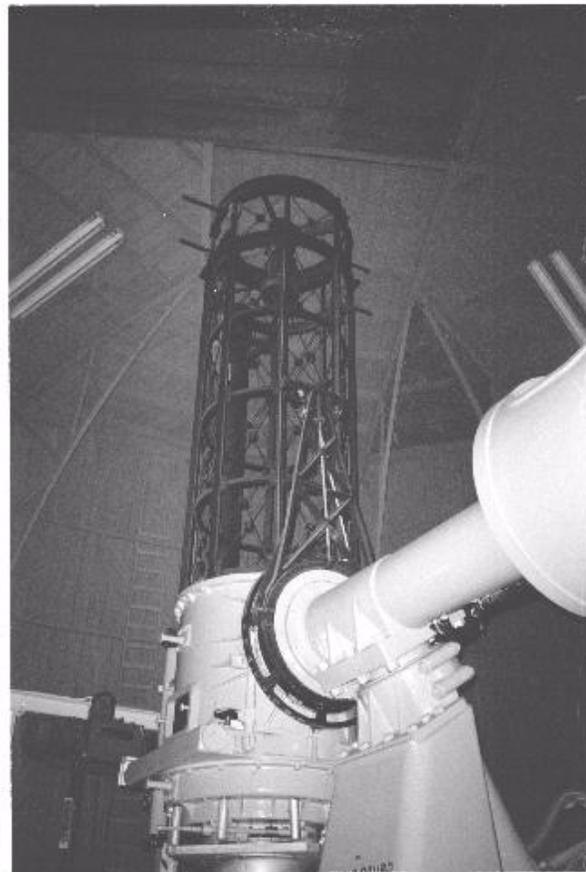
All in all we had a great six days with good science , excellent international company, wine , beer and food .

Next years Symposium is in Napoli . ESOP Italy , here we come !!

Auld Reekie - A weekend in Edinburgh

Edinburgh is so close to home that by train you can be up there in a few hours for a pleasant weekend or mid week jaunt . Our excuse was a combination of an Edinburgh Astronomical Society meeting and public lecture on Friday night by Dr Dave Gavine , the Director of the BAA Aurora Section followed by the actual Aurora Section Meeting on the Saturday.

Edinburgh possesses two hills with observatories . Our hotel was just below Calton Hill , the home of the Edinburgh Society and its own observatory (and the venue for the Aurora Meeting) . The other hill (Blackford) carries the Royal Observatory and its Visitor Centre . This wee piece just gives a taster of what is to be seen here at Blackford Hill.



The Royal Observatory Edinburgh is a professional institution and thus is not freely accessible to the public but there is a worthwhile Visitor Centre with historical small scale

instruments to view together with information as to current professional work carried out by the RO 's staff . There are two large telescopes to look at (if not through) . The left hand picture shows the dome of the 36 " telescope shown to the right . A large spectrograph is present on the floor adjacent to this telescope .

In another dome is a 16"/24" Schmidt Photographic telescope . Both these instruments are now disused but freely viewable in your public walk through . As you cross the roof walk between the two domes you pass a viewing scope that allows you to look across the Edinburgh skyline and see the domes and tower atop Calton Hill .

Under development here is a Gerrish style Polar mount Solar Video camera for public solar viewing on a monitor . Perhaps this may be finished in 2002 ?

Starlight in Thetford Forest

I can recommend Loughton Astronomy Society's Thetford Forest Star Party whether with your tent , motor home or caravan . Four steady hours from this neck of the woods , with breaks from driving. This easy travelling gets you and your telescope down to the Dower House Touring Park in Norfolk . Taking it steady leaves you in a fit state for a nights observing .

The first Saturday is the principle day of the event and is a combination of daytime telescope tours , table top astro car boot sale and trade stands , a few lectures and a 'Stargazers Meal Deal' to follow . If you like to wander around and view scopes and later look through some of them under dark skies then this is a good venue for you. The kit here is a pleasant mixture of ' Go to scopes ' , Dobsonians , both large and intermediate and several home made scopes as well . There were at least two 'Observatory Tents' present (see the Sky and Telescope ads) and at least two telescope supply houses had equipment available for night viewing sessions.



The sky was rather good when the clouds moved away with the Milky Way stretching across from one side of the sites sky to the other . The rules are red low intensity lights at night and no vehicle lights . If you must move your car in the dark you will be walked out

with no lights on by a Loughton AS steward. You can literally feel the 'groan' when a car boot light or courtesy light comes on !! Dark adaption is all .

I hope next year some of you may make the trip down . There are electrical hook-ups for those that need them and a good bar with good quality bar meals (and Murphy's Stout too)

For more information visit these two web sites :-

http://ds.dial.pipex.com/allan.bell/las_home.htm

<http://www.dowerhouse.co.uk/>

HBAS 2002 SEASON LECTURES

Following on from David Cooks enthralling "The Origin of the Metre" lecture that started our season in September we have :-

October 17th 2001 "Big Fuzzy Blobs" Rod Hine of Bradford A.S. brings his new talk presented using computer projection technology to enlighten us about 'Big Fuzzy Blobs'. We are guaranteed a very interesting and challenging night (as with his previous visits)

October 31st 2001 "Members' Night"

A night where members can bring along slides , video , projects etc to show others how you 'do' your own astronomical thing. An increasing aspect of these evenings is the number of members bringing items of equipment to demonstrate including some of the new telescopes that are available.

November 14th 2001 "The Liverpool (Robotic) Telescope - La Palma" -

Dr.Andy Newsam of the Astrophysics Research Institute at Liverpool John Moores University talks to us about their project building a 2 metre Robotic Telescope at La Palma, Canary Islands.

December 12th 2001 "Calendars of the Beaker Folk"

Bob Lomas gives us quite a change from modern astronomy and research when he takes us back to prehistoric times when prehistoric stone circles were built around 2300 BC by early Bronze Age people known as the Beaker Folk . Bob talks about whether these ancient constructions are solar or lunar predictors or map the Zodiac .

January 9th 2002 "Do It Yourself CCD Video Photography"

Mike Alexander - A regular visitor to our meetings from Bradford A.S. shows us how he has set about doing his form of Video Astronomy with easily available , non expensive cameras and electronics. This could provide inspiration for some of our members to 'wet their feet'

February 6th 2002 "Grassroots Astronomy"

Melvyn Taylor - Leeds A.S. where Melvyn discusses Astronomical Societies , their history , developments with many amusing anecdotes from his vast knowledge of the hobby. A look at where we are and where we may be going.

March 6th 2002 "Semi-Serious Observing" Cliff Meredith - Salford A.S. where Cliff visits us again and takes us on a further trip into his astro world and his point of view. Unsurprisingly (!) to many of us he calls his talk Semi Serious Observing . We cant predict this one but expect Cliff to have some interesting and unusual pictures.

April 3rd 2002 "Sidewalk Astronomy" Dave Owen - Liverpool A.S.
Dave introduces us to what he and fellow members of Liverpool Sidewalk Astronomers (LASSA) do in what is now termed 'public outreach' (!) taking the telescopes to the people. They are following in the footsteps of the San Fransisco Sidewalk Astronomers and John Dobson , the guy whose name is identified forever with a popular telescope design.

May 1st 2002 "A.G.M. and Members' Evening
An evening where the brief but essential business of the AGM can be dealt with and concluded , The bulk of the evening will then be given over to a display of members slides , video , projects , equipment etc to show others. This date has been brought forward to accommodate the last lecture of the season

May 8th 2002 "Making Planets" Prof. Mike Woolfson worked with a team at York University on new theories on the formation of our Solar Planetary system which seriously question many of the previously held explanations . He gives is a very well presented argument which we should find challenging.

Forthcoming Sky Events to watch out for :-

Occultation of Saturn by the Moon on November 4 th at about 21h 09 m UT disappearance and 22h 03 m UT re-appearance.

Occultation of Saturn by the Moon on December 1 st at about 02 h 20 m UT disappearance and 03 h 30 m re- appearance.

Try using your video camera , digital photography or conventional photography through your telescope to record this as the rings and the planet drift behind the Moon

A moderately bright comet puts in an appearance . This is Comet C2000. WM 1 (Linear) . During November / December this comet heads through the Auriga / Perseus region , through Aries and then into Pisces. This should be in the range of small telescopes and binoculars . Astrophotographers should take up the challenge of imaging this one

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