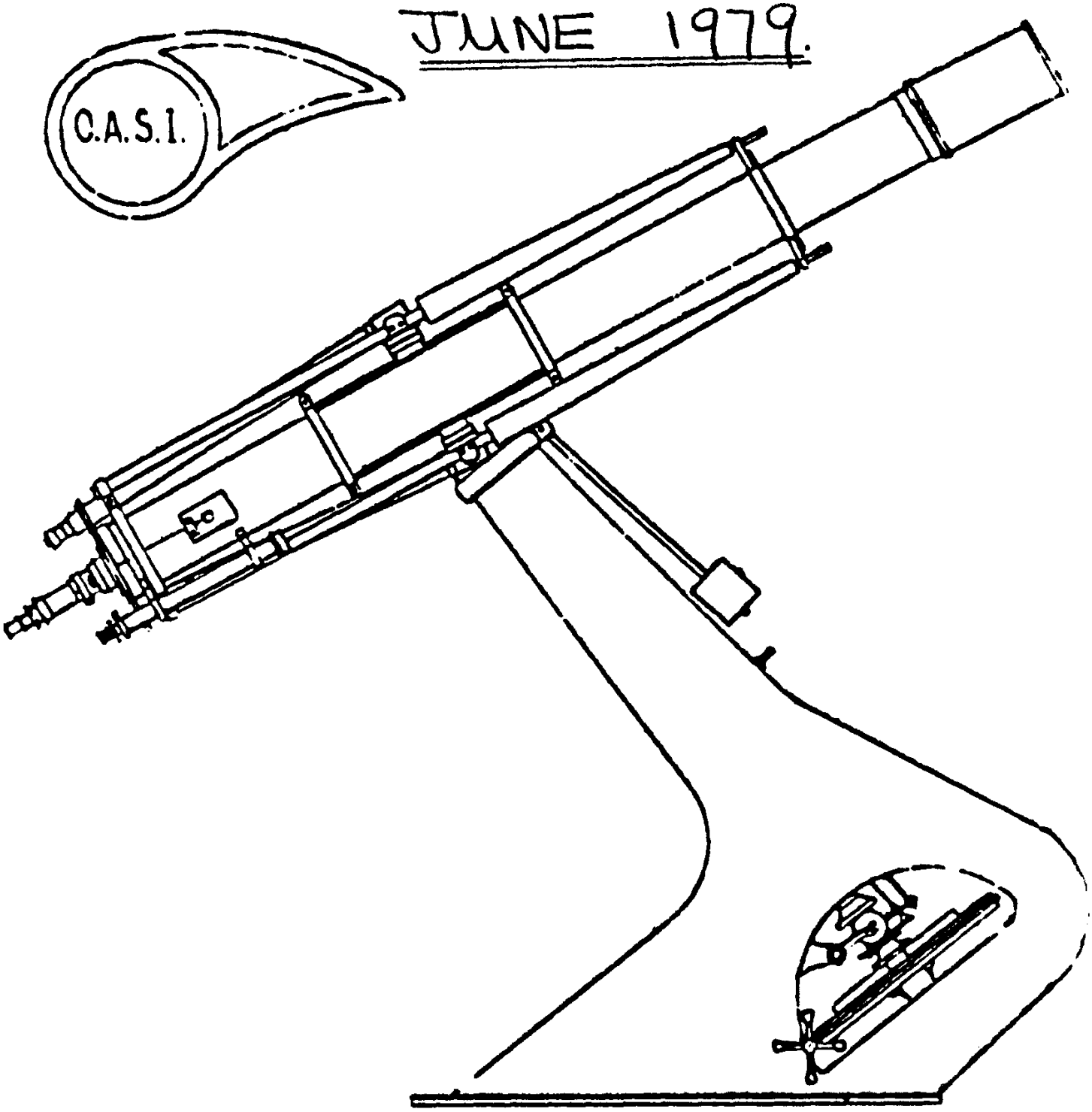
THE JOURNAL OF THE ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

Editor: Mr. Paul Burt, [redacted], Ipswich IP1 6PP 'Phone Ipswich [redacted]

Producer: Roy Adams, [redacted], Ipswich IP2 9ST 'Phone Ipswich [redacted]

Your submissions of items for the Journal will be welcome.

JUNE 1979.



The Orwell Park Observatory 10-inch Astronomical Telescope at Nacton near Ipswich

Draco is in the zenith this month, winding itself around Ursa Minor. The neck and head of Draco point toward Hercules, which is on the meridian around midnight along with Corona. South of these two is Ophiuchus, lying on the ecliptic between the disjointed Serpens (Caput and Cauda). To the east, the 'Summer Triangle' of Vega (in Lyra), Altair (Aquila) and Deneb (Cygnus) is now clearly visible. On the southern horizon Antares in the head of Scorpio reaches its highest point in our skies this month. Bootes and Virgo are in the south-west and Leo dominates the west.

THE SUN

Sunrise is at 03h40m throughout the month, and sunset is at 20h10m at the beginning of the month, changing to 20h25m at month-end. Summer solstice is at 21d23h56m, with the Sun reaching maximum altitude of 61.1/2°. The Sun moves from Taurus to Gemini during the month.

THE MOON - Phases

First Quarter	2d22h37m	Last Quarter	17d05h01m
Full Moon	10d11h55m	New Moon	24d11h58m

Occultation

Star	Phase	Mag.	Time
1474	D	7.1	1d20h53.7m

D= Disappearance. Star listed according to Zodiacal Catalog (ZC) number.

THE PLANETS

Mercury is an evening star setting an hour-and-a-half after the Sun in the latter half of the month, decreasing in magnitude from -0.9 on the 11th to +0.6 on the 30th.
Venus is still a morning object rising an hour before the Sun at mag. -3.3 throughout the month.
Mars rises at around 0200h, at mag. +1.5, in Taurus.
Jupiter sets at about 2300h in Cancer, at mag. +1.0 in Leo.
Uranus is still well above the southern horizon near midnight in Libra at mag. 5.7.
Neptune reaches opposition on the 10th in Ophiuchus at mag. 7.7, when its position will be RA 17h13m, Dec. -21°30'.

MUTUAL PHENOMENA OF JUPITER'S SATELLITES

June is a favourable month for the mutual phenomena of the Galilean moons. Rather than leave one in the dark about the cryptics, the 'key' as in the '79 Jan Journal (of the O.A.S.I. - a cryptic not needing to be explained?) is repeated here.

In the 'Event' column, I = Io, II = Europa, III = Ganymede and IV = Callisto. O = Occultation, E = Eclipse, P = Partial and A = Annular. (For example, II O III P means that Europa partially occults Ganymede.) Times given are for mid-phenomena, and S.D. is the semi-duration (in Minutes), which is the time from start to mid-phenomena.

Event	Time	S.D.	Event	Time	S.D.
III E I P	2d13h46m	2.0	IV E II P	22d10h10m	2.5
III E I P	9d16h55m	3.2	III E I P	24d00h53m	12.0
III E I P	10d10h01m	13.2	III E I P	24d05h39m	16.3
III E I P	10d13h41m	5.7	III E I P	24d22h03m	1.8
I E IV A	12d11h05m	4.0	III E IV A	30d20h07m	3.0
III E I P	16d20h24m	5.0	III E II P	30d23h07m	0.3
III E I P	17d18h31m	1.0			

Source: BAA Handbook 1979.

All times are U.T. (= B.S.T. minus 1 hour).

OBSERVATORY NEWS (LIFT SPOT AGAIN? WELL, JUST A LITTLE, FOR A LOT)

Just the other day, I received a very interesting and useful letter from Brian Mitchell, C. Eng., M.I.Mech.E, Chairman of Norwich A. S. (and designer and part-builder of Norwich Observatory's 30-inch telescope and Dome). Brian read our article on the

Orwell Park Observatory lift and volunteered much information of his own past experience of maintaining 19th-Century hydraulic power installation lifts and cranes. His letter and diagram, which I may publish if he agrees after I have asked him, certainly gives us more clues to look for and clarifies some points of operation.

'BIG-TEN' DRIVE AND CLUTCH MECHANISM

David Payne and Martin Cook and others have now completed their advanced design torque-limiting clutch/safety-slip mechanism on the polar axis of the main telescope, apart from final adjustment to the limit screws and placement of 'Please Don't Re-adjust' notice. The new provision should make use of the telescope a lot easier, even though (at the moment) the clutch seemingly can't be controlled from the eyepiece position. The original clutch mechanism was a divine piece of equipment, no doubt, and has, what was left of it, been left on, but not enough of it was left to exactly duplicate it and the control of it from the eyepiece position it appears must have been slow. The Payne-Cook clutch can be operated much more quickly, beatable perhaps only by an electro-mechanical (low-volt?) clutch which, however, would need further thinking-out and which might pose a problem of arranging the control cable to the eyepiece zone. One can never 'have it' all ways and on behalf of 'Big-Ten' users (past, present and future), I think 'thanks' should be recorded for the work put in by the workers concerned.

FILTER/DIAPHRAM HOLDER IN FRONT OF LENS HOOD

Six locating screws have now been fixed to allow placement of before-o.g. filters - or acclimatisers - for solar work, and for stop-down diaphrams to improve the quality of the image in poor seeing (hopefully!) Other lightweight equipment may be fitted temporarily for testing in this position, with due regard to the proximity of the object glass which must be considered at all times.

I have tried some black Perspex on the front (the locknuts should remain as they are as air-gap distance pieces for air circulation within the lenshood) but although sunspots can be seen at prime focus (projected, of course, on white card) the image at such a long focal length is useless for serious observation and the only thing the perspex is good for there is to acclimatize the lens before reasonably low altitude solar observation. I have found the perspex possibly of some use in lenses of much shorter focal length, but it only goes to show that some improvement in such cases can be made by using more-optical glass filters. Seeing in the BAA Journal recently that Bausch & Lomb must make, or have made, before-o.g. or before-primary-mirror solar filters of high density (low transmittance) for solar photography, at least 150 mm in diameter, I have written to that company and am still awaiting a reply - maybe a wayward rocket or Skylab or two would help get over postal difficulties which I understand, in this modern age, are still affecting London mail at the moment...

From what I've heard on the cost, it may be prohibitive, and a return to seeing the possibilities of polyester film in two layers, suitably stretched over an intermediate holder, may be necessary, from somewhat cheaper cost, though renewal may have to be more frequent. I also have had an idea that a large diagonal aluminized flat, minus aluminium, might even be tried, though secondary reflections could pose difficulties unless the field was very narrow. A major problem with this might be the crab-like way of pointing the telescope in order to get the Sun at all, with the thing on the front of the lenshood to pass only about 7% of the Sun's radiation to the o.g. and eyepiece and any further filters, projection screen, camera or whatever.

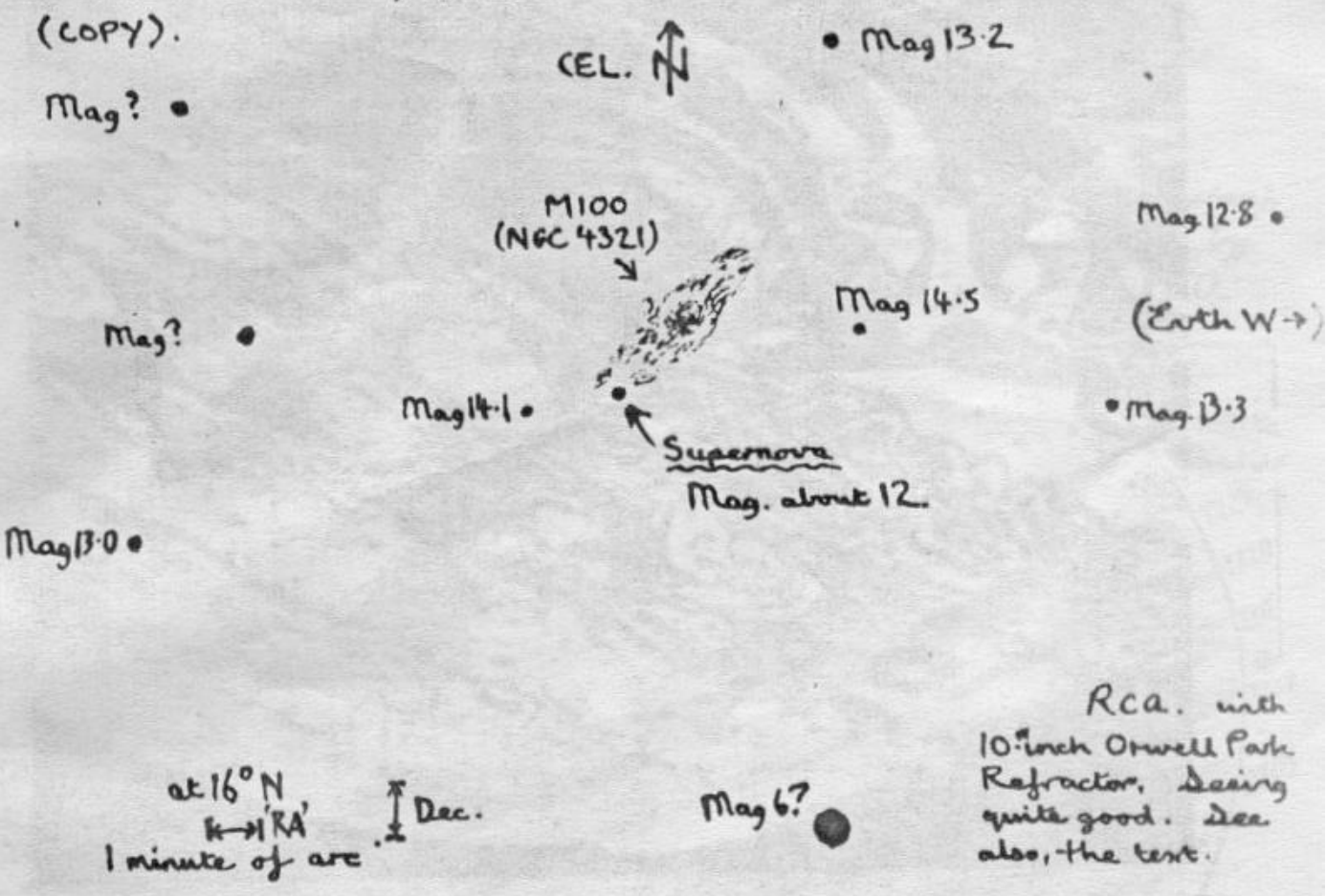
Perhaps if readers will treat this as a speculative advert for info on a decent before-o.g. filter, we may come quicker to the rewarding goal of serious solar observation. It has also been suggested by another solar observer that we try to get an eyepiece with wide-enough field to get in all the solar disk on the ten-inch. If the response to this 'advert' is as good as that for a donated kettle (not that we expect donation of an expensive solar filter!) we will get one and (not so seriously,

of course) we won't have to leave the filter off to boil our tea during a solar observing session! Credits for finding the (electric) kettle to D. Bearcroft.)

SUPERNOVA IN COMA BERENICES (NGC 4321 ALIAS M100)

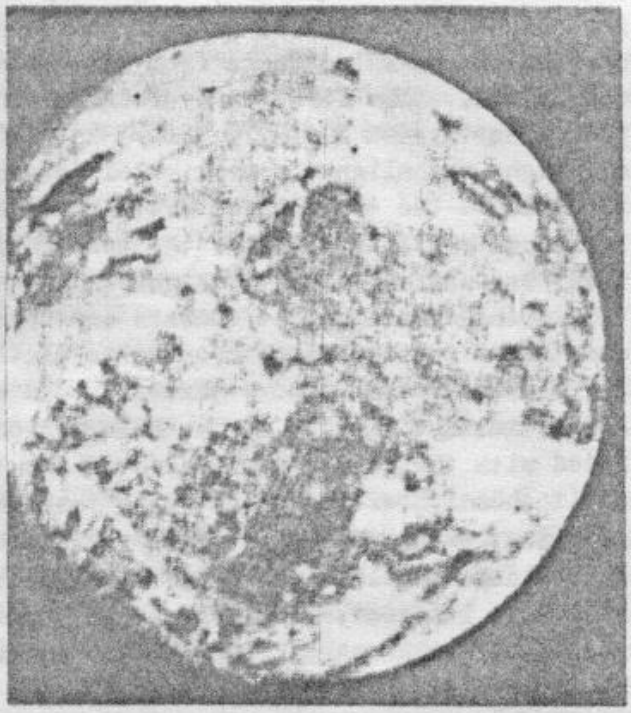
We were alerted by The Astronomer - Early Warning Circular No. 35 - of the discovery of a supernova about 2'10"arc SE of the galaxy M100, nucleus. The discovery was made by Johnson visually, only the third to be discovered in such a way in history, on 1979 Apr. 19. The Circular reached us just after the May O.A.S.I Journal went to 'press', and since then, thanks to a lucky time window in the cloud and Mike Barriskill's finding, a few of us have seen the supernova.

On April 28th, 2230h, Mike estimated the magnitude (no comparison star sequence offered at this stage) to be about mag. 12. It was very clearly seen in the ten-inch, and, perhaps foiled by the strange clarity of the sky, the comparative magnitudes I allotted some of the stars in the neighbourhood were far too high. Mike, of course, is more used to such observations and the Circular No. 36 magnitudes, which are also likely to be much nearer correct than mine, are appended in the drawing I made below-copied. One consolation for my magnitude over-estimation is that my eyes must be much better than I thought they were! M100 is located at 12h20m.4, +16006' (1950). Mike and others had another look on May 18th (yesterday as this is typed) and a consensus of mag. 13 is the latest they then arrived at for the supernova. It should thus still be visible for those with large telescopes, and so I hope the drawing, if The Astronomer relevant E.W.s are not to hand, will be useful.



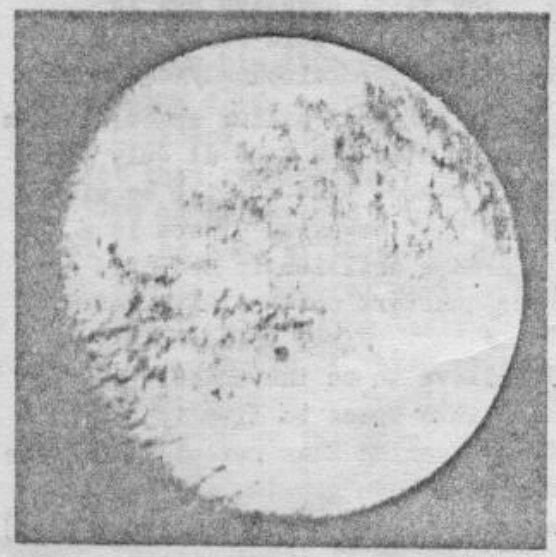
METEOR SHOWERS - Two rather minor showers are listed for June - the Lyrids, Z.H.R. max. June 16th, normal limits June 10th-21st, RA 18h32m, Dec. +35°, and the Ophiuchids, Z.H.R. max. June 20th, normal limits June 17th-26th, RA 17h20m, Dec. -20°. There may also be some daytime meteors about - the Zeta Perseids, at the beginning of the month, radiant about 04h, RA; Dec +22°. The latter are supposedly quite plentiful, more than one every two minutes (Zenith) but few may be bright enough to see in the summer day. Be careful in diagnosing all such 'sightings' as Skylab, therefore... RCA

HERE, as promised in last issue, are some more JUPITER PICS for you. The big one above was taken from over 6m km away. The feature below centre IS the Great Red Spot, as you may guess. The dots 'grid' in the picture is part of the system used in Voyager 1 in this composite. The Galilean moons opposite are, in order of picture size, Ganymede, Io and Europa. Ganymede may be ice-covered rock, with dull brown colour (coffee grounds instead of cheese?) Io is smooth and plains may be lava flows from extensive volcanic activity. Europa is a bit like Ganymede in appearance and colour, though lighter-toned.



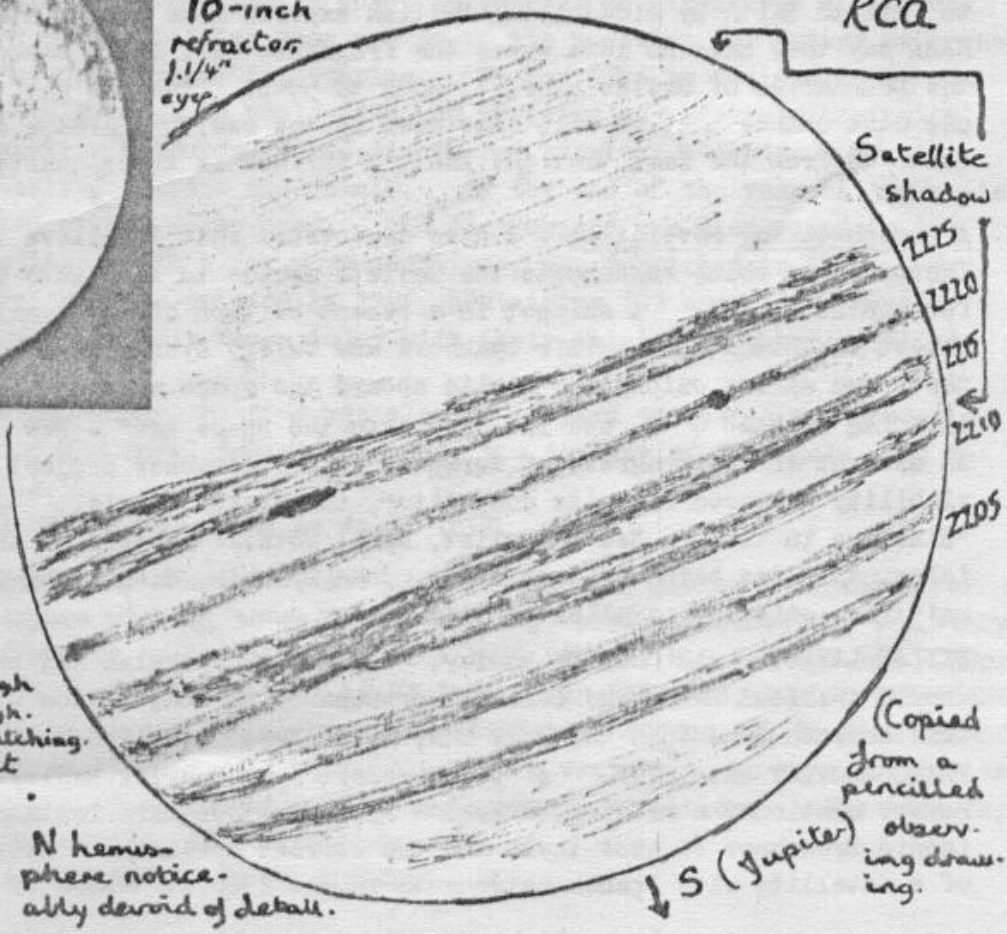
These Jovian moon shots were taken from distances ranging from 2.5m to just under 1m km, by Voyager I.

SOURCE: FLIGHT INTERNATIONAL (& NASA)



(from, 650m km & through Earth's atmosphere),

Below: Jupiter from Orwell Park by RCA



Time: 1979 May 12, 2200 to 2235 UT

Satellite shadow as at 2220 UT. It is possible the dark elongated oval in the NNEB is also a satellite shadow, though not seemingly dark enough. Cloud precluded further watching.

Jupiter's satellites aspect at the same time

N hemisphere noticeably devoid of detail.

(Copied from a pencilled observing drawing.

 FROM OTHER JOURNALS - Quasars - Not so Distant? Mounting evidence now links quasars, originally thought to be vast distances away, with galaxies situated much nearer to us. Studies of two separate galaxy systems have been carried out by astronomers from Hale Observatory, California, which point toward this conclusion. The first study found a group of eight quasars in the vicinity of the triple galaxy system NGC 3379/3384/3389. Six of the objects have similar red shifts and all eight are aligned approximately along the rotational axis of the elliptical galaxy NGC 3384. The two closest are aligned exactly through the galactic nucleus and have identical red shifts, while the next pair out are similarly positioned, again with identical red shifts, slightly higher than that of the first pair. One explanation for this arrangement is that quasars are formed in violent events in the nuclei of galaxies, and thrown out in pairs in opposite directions.

In the second study, three quasars appear to be embedded in the arms of the barred spiral galaxy NGC 1073. The Hale astronomers believe the quasars to be clearly associated with the galaxy since each of the two spiral arms which appear to contain quasars split shortly before encountering them and continue past weakly on either side. In addition, each quasar has ultra-violet objects at points diametrically opposite across the galactic nucleus. In previous galaxy-quasar associations, the quasars have generally been located some distance away from the central galaxy, but the NGC 1073 study suggests that quasars formed in the nucleus of a spiral galaxy are gently carried out by materials forming in the arms, rather than violently ejected as in the case of elliptical galaxies. If this is correct, then similar quasars should be associated with other barred spirals, such as the Milky Way. Initial checks on some galaxies have already revealed positive results.

These two studies demonstrate that high red shift quasar/low red shift galaxy associations can no longer be dismissed as coincidences. The vital question now is whether all quasars can be linked with galaxies in this way; this would rule out the possibility that they are distant cosmological objects. (Astrophysical Journal/New Scientist)

Skylab Demise - NASA have announced that they expect their infamous ailing space station to fall to Earth by mid-July. British experts have pin-pointed the date at July 5th. NASA say they have no idea where the fragments will fall, except that it will be within the boundaries of Skylab's orbit, 50°N to 50°S. They do say, however, "there is a 75 per cent chance that it will come down in the sea." Perhaps brilliantly deducted (or deduced) from the fact that the Earth's surface is three-quarters covered with water?
(New Scientist)

A Breath-taking Revelation - I have discovered what I believe to be the underlying factor as to which cosmonauts the Soviets decide to send into space to live in Salyut 6 for months on end. A snippet in a recent edition of the Evening Star revealed that the latest inhabitants, Vladimir Lyakhove and Valery Ryumin have been growing and eating their own spring onions and garlic aboard the space station. Say no more! (Paul Burt)

ARTICLES TO READ - "Europe launches into the Spage Age" - New Scientist, April 19th. An account of the progress of Europe's Ariane launcher project, and its commercial viability compared with its competitor, the Space Shuttle.

"Sideways in Time" - New Scientist, April 26th. Another of those heavy relativity articles, this one being written by Dr. John Gribbin, discussing the possibility of other universes existing parallel in time to our own.

SKYLAB LATEST - via Charles Radley. RE-ENTRY of Skylab has been estimated by NORAD (North American Radar and Defence) presumably in conjunction with NASA, to occur sometime between June 15th and July 2nd, with 'best' likelihood on June 21st.

FRANCO-SOVIET SATELLITE. A 'phone report from Charles Radley on news from Simon Harvey mentioned a meeting of French President Jusquard Destang and Russian Premier Leonid Breszhnev (I hope these are the correct spellings - STOP PRESS!) re the launch of a satellite with French astronauts in the 1980's. More of this later?

Charles Messier was born on June 26th 1730, in a small French town, Badonviller. Messier was born into a large family, being the tenth of twelve children. He only received a simple education, which he completed whilst still at an early age. Finding very few prospects of employment at home, Messier, at the age of 21, left home to seek work in Paris.

Messier's sole references were that he had neat handwriting and a little knowledge of draughtsmanship. He eventually found employment from Nicholas Delisle, who had established an observatory in the Hotel de Cluny under the auspices of the French Navy. After a few years at the observatory, Messier's position earned him an official title, this being Clerk of the Depot of the Navy which included a small salary. Though his main duties were keeping the observatory's records, Messier found the night observations more to his liking. He had been interested in astronomy since his early teens, especially in the discovery of comets.

In 1705, Halley (see last November's Journal) had predicted the return of the comet he had seen previously in 1682, to be in late 1758 or early 1759. Many observers started searching for the comet more than a year before its expected recovery. Delisle had drawn up a chart for Messier to use in searching for the comet. Messier actually started to look nearly two years before the comet's expected reappearance. Messier found the comet on January 21st, 1759, but could not claim to have been the first to sight it. A German astronomer, Patitzch had first seen it about four weeks earlier on Christmas Evening.

About a year later, Delisle retired, leaving Messier the observatory and equipment all for his own use. Messier's work was almost exclusively devoted to the discovery and observation of comets. He discovered a comet on January 3rd, 1764, and was fortunate enough to discover another one two years later by a chance naked-eye observation. Between 1760 and 1798 Messier discovered 15 comets.

During his life Messier was interested in comets to the almost total exclusion of everything else. Today, though, he is only remembered for his catalogue of Nebulae and Star Clusters. In 1758, whilst observing a comet in Taurus, he discovered a nebulous object that resembled a comet. Messier made a note of its position for future reference. In 1760 he discovered a second object, in Aquarius. By May 1764 he decided to make a list of as many of these objects as he could find, so avoiding any possible confusion with comets. Several earlier astronomers had discovered nebulous objects. Messier observed these, noting their positions accurately. By the end of the year he had a list of 40 objects, 22 of which he had discovered. The 41st object was discovered in the following January. The list, with a few more additions, was published in 1769. The final version of the catalogue was printed in 1781, containing 103 objects. Messier's nebulae and star clusters are simply known today with their catalogue number prefixed with the letter 'M'.

For his services to astronomy, Messier was elected to many societies and academies all over Europe, including the Royal Society, London, the Academy of Stockholm, and the Academy of Sciences, Paris.

Messier lived until he was 86, dying in April 1817.

(GREENWICH VISIT. As previously announced, a visit to Greenwich has been arranged for (SATURDAY, 23RD JUNE. Anyone wishing to go on this outing, please contact the Secretary, (Michael Barriskill. If you do so by telephone, the best time is between 6pm and 7.30pm (any evening except Fridays. The coach will LEAVE from TOWER RAMPARTS, BEHIND DEBENHAMS, (at 8AM. We expect to leave London at 5.30pm. A guided tour around the 28-INCH REFRAC-(TOR has been arranged for 12.15pm. It is possible that a visit will be arranged for the (Laird Planetarium as well. If so, details will be announced on the day. The cost for (the trip will be £2.50 for adults, £1.50 for under-14's.

(A TRIP HARDLY TO BE MISSED!!)

 PROGRAMME FOR JUNE 1979 At ORWELL PARK OBSERVATORY, [redacted]CTON, IPSWICH

TUESDAYS from 7 pm: Planetary Section May 29th; June 12th, 2[redacted]n; July 10th
Directors Mr. J. Hood, [redacted], Ipswich
and Mr. J. Ranson, [redacted], Ipswich 'Phone Ipswich [redacted]

TUESDAYS from 7 pm: Solar and Lunar Section June 5th,19th; July 3rd
Directors Mr. J. Hood, [redacted], Ipswich
and Mr. M. Barritt, [redacted], Ipswich.

WEDNESDAYS from 8 pm: Nebulae and Faint Objects Section May 30th; June 6th, 13th,
Directors Mr. D. Payne, [redacted], Wickham Market, 20th, 27th;
Suffolk 'Phone Wickham Mkt [redacted] July 4th & 11th
and Mr. M. Cook, [redacted], Ipswich 'Phone Ipswich [redacted]

FRIDAYS from 8 pm: Variable Stars Section June 8th, 22nd; July 6th
Directors Mr. R.S. Manning, [redacted], Ipswich
and Mr. M. Siggers, [redacted], Ipswich

SATURDAYS from 8 pm: General Section June 2nd & 9th. Further dates to be fixed.
Directors Mr. M. Barriskill, [redacted], Ipswich 'Phone Ipswich [redacted]*
and Mr. R. Adams, [redacted], Ipswich 'Phone Ipswich [redacted]
*Mike works nights, 'phone times rather restricted.

METEOR SECTION No meeting planned yet for this month. Details of this Section work from Mr. D. Barnard, [redacted], Ipswich, 'Phone Ipswich [redacted].

NEXT COMMITTEE MEETING, June 16th (Saturday) at the Observatory.

LECTURE PROGRAMME & STOP PRESS. We have just heard that Heather Couper has an unexpected work commitment on the evening of Friday, May 25th, coinciding with her advertized talk on Exploding Galaxies. A bit of a bang for us, but people even with present human technology can't be in two places 70 miles apart, at once. Something else will be arranged for May 25th, at 7.30pm at the Friends' Meeting House, 39 Fonnereau Road, Ipswich. A SURPRISE PARCEL! MAY BE AS WELL TO COME ALONG AND SEE! Heather Couper's talk may be given on one of a couple of alternative dates suggested by her, so we will have something extra in our programme. ALTERNATIVE DATES provisionally June 8th and 22nd. DETAILS WILL BE POSTED UP IN THE OBSERVATORY, when possible.

OPEN DAY DRAW CHOICE OF PRIZES has been announced: main ones anyway.
1 A pair of binoculars.
2 A digital quartz alarm clock.
3 A portable radio.
Tickets will soon be ready.

STICKERS: HELP SOCIETY 'REVENUE' IF ONLY in a small way by means of these. Their selling price is 10p each.

MEMBERS' ADS:

● FOR ALL CLOCK REPAIRS B I G or small, ancient or modern by competent craftsman Society member, 'phone Ipswich [redacted] (evenings) for all inquiries.

● WANTED: Decent TELEPHOTO LENS, preferably Zenit/Pentax 42mm fit, for stellar and similar photography. 200mm-300mm most suitable, below F6 if possible. Also any over-lens filters, and an ADAPTOR RING 'B', Zenit/Pentax lenses etc to Zorki/Leica camera body fitting. Contact RCA.

DATES FOR YOUR DIARY.

Saturday 23rd June, 1979.

DAY TRIP TO GREENWICH.

We have booked a coach for a day trip to Greenwich on the above date. Cost £2.50 each, reduction for children.

NAMES NOW to M. Barriskill, [redacted]. Ipswich
Telephone Ipswich [redacted]

We have only booked a 28 seater so first come first served.

Saturday 28th July, 1979, 3p.m. to 6p.m. approx.

Visit to Orwell Park Observatory by the South East Essex Astronomical Society of Southend-on-Sea.
Come along and meet other fellow amateur astronomers!

August 1st to 5th.

North Essex Caravan Club Rally at Orwell Park. A few nights will be arranged to show their members our telescope. Come along and have a good time! Full details will be published in coming Journals.

Saturday 29th September, 1979. 2p.m. to 11p.m. approx.

O P E N D A Y

Arrangements are in hand for the Open Day. We would like as many members as possible to help in this fund and fun raising day. If you can help on the day or before the day in getting things ready please volunteer NOW. If you have anything of astronomical interest which we can display please contact Mr. R.M. Cheesman, [redacted], Ipswich

A meeting will be held at the Observatory during July to discuss the Open Day, the date of which will be advised in the Journal A.S.A.P.