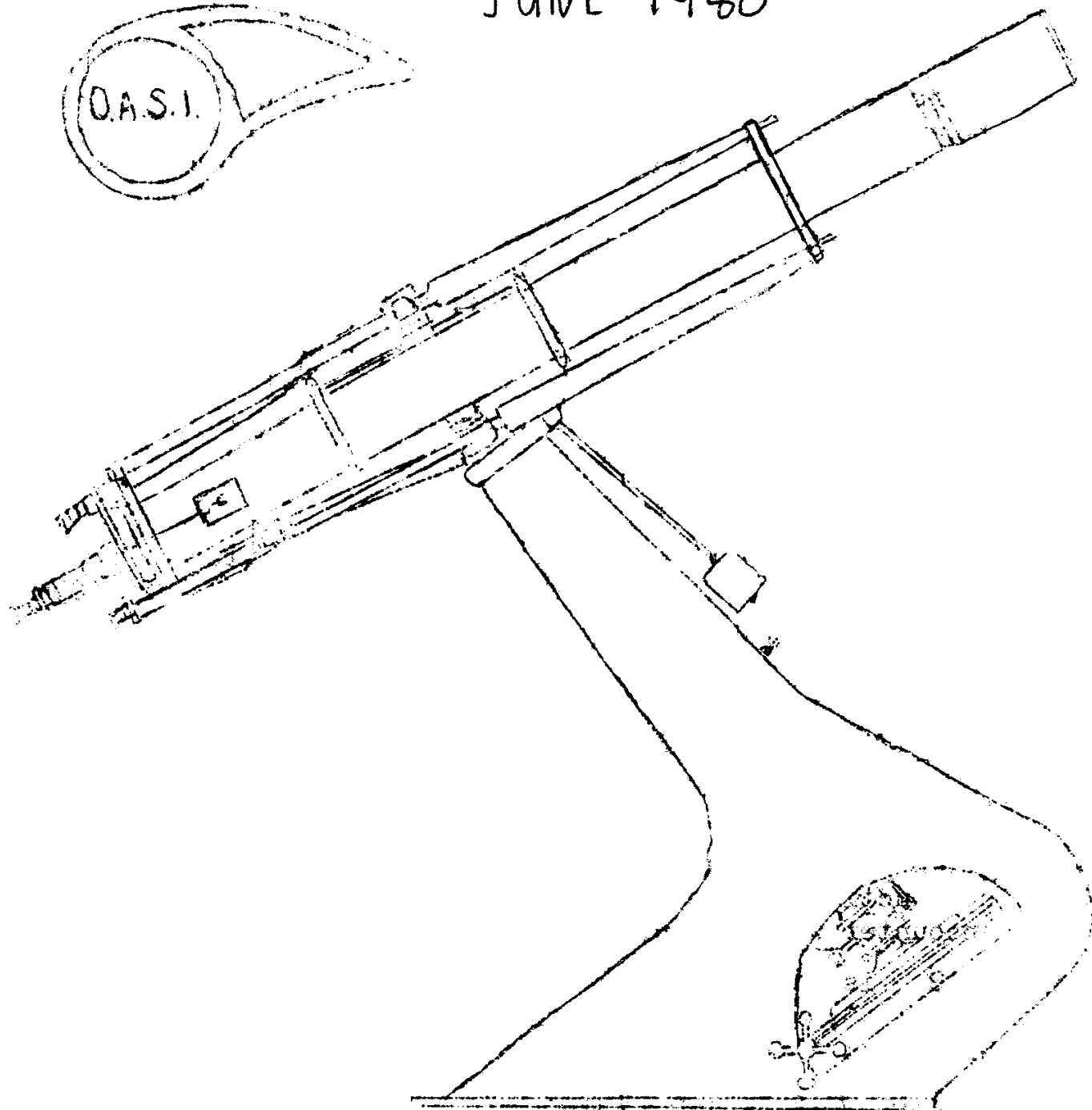


Editor: Mr. P. Burt, [redacted], Ipswich, IP1 6PP

'phone Ipswich [redacted]

Producer: Mr. R.M. Cheesman, [redacted]
WEST HANNINGFIELD, Chelmsford, Essex. CM2 8LQ

JUNE 1980



The Orwell Park 16 inch Astronomical Telescope
at Facton near Ipswich

THE NIGHT SKY as seen from Orwell Park in June: by P. Burt.

The Zenith plays host to Draco this month flanked by Cygnus and Lyra to the east, and Ursa Major to the west. The Southern aspect provides a good test for any budding astronomers trying to learn their night sky. Below the readily identifiable constellations of Hercules, Corona Borealis and Bootes lie several inconspicuous groups. Starting from the east, Aquila can be found, by its main star Altair, which forms the summer triangle with Deneb and Vega. Next comes Ophiuchus, directly below Hercules, and dividing the Serpens constellation into its two components, Caput and Cauda (head and tail). Just above the southern horizon lies Libra, and in the south-west, below Arcturus, is Virgo. Finally, this month is the last opportunity to view Leo basking in its present glory as host to Saturn, Mars and Jupiter, before it slips below the western horizon.

THE SUN - Sunrise is at 03h 40m throughout the month, and sunset changes from 20h 10m to 20h 25m during the month. Summer solstice is at 21d 05h 47m. The Sun moves from Taurus to Gemini during the month.

THE MOON - PHASES:-

Last quarter	06d 02h 53m	First quarter	20d 12h 32m
New Moon	12d 20h 38m	Full Moon	28d 09h 02m

There are no easily visible occultations this month.

THE PLANETS:

MERCURY is an evening star this month, setting 2 hours after the Sun during the first week of the month. It will be $0^{\circ}.3N$ of Venus at 1d 18h, when its magnitude will be -0.4.

VENUS is rapidly moving towards the Sun, reaching inferior conjunction on the 15th. Its magnitude on the 1st, during its encounter with Mercury, will be -3.8.

MARS is moving rapidly eastwards across Leo this month, at mag. +1.1, and setting around 00hrs. It will be $1^{\circ}7$ south of Saturn at 25d 13h.

JUPITER is in Leo at mag. -1.5, setting just before Mars.

SATURN, also in Leo, is at mag. +1.3, setting around the same time as Mars.

URANUS is visible until after mid-night in Libra, at mag 5.7 2.

URANUS reaches opposition on the 12th, at mag. 7.7, in Ophiuchus. R.A. = 17h 23m. Dec. = 21° 45'

Source - B.A.A. Handbook 1980. All times are U.T. (B.S.T. minus 1 hour)

ARTICLES TO READ.

'What's wrong with the Sun?' April 24th.

A look at the unanswered question of how does the Sun shine? There is conflicting evidence between visual observations which basically show that the diameter is stable, and the lack of neutrino emissions, which suggests that the Sun is shrinking. This conflicting situation suggests that our fundamental ideas of nuclear activity in stars could be wrong.

Paul Burt.

NOTABLE ASTRONOMICAL ANNIVERSARIES

GIOVANNI CASSINI

Report by Roy Gooding.

Giovanni Cassini was born at Perinaldo, Italy on 8th June, 1625 and was the founder of five successive generations of astronomers. Cassini studied mathematics and astronomy at a Jesuit College. His original reason for studying astronomy is said to have been so that he could prove astrology had no scientific validity. In 1650 Cassini was offered the post of Professor of Astronomy at Bologna University and held this position until 1669.

While at Bologna his main area of study was the solar system. In 1665 and 1666 he determined the rotation periods of Jupiter and Mars. Two years later he had published a table on the motions of Jupiter's Galilean Moons. This report was later to help Roemer in his discovery of the speed of light. Cassini was also one of the first astronomers to study the Zodiacal Light.

By 1669 Cassini's reputation was known throughout Europe, so much so, that Louis XIV invited him to become director of the Paris Observatory. He redesigned much of the observatory removing ornamentations that would be a hindrance to his work. At Paris Cassini worked with Christian Huyghens and together they made

many important advances in astronomy.

Cassini's telescopes were very cumbersome to use, but this was no hinderance to his discoveries. The telescopes were refractors that had a very long focal lengths, over 100 feet in some cases. He discovered four satellites of Saturn between 1671 and 1684 and observed a division in Saturn's ring system which still bears his name. Cassini believed that the rings were composed of large numbers of small particles, but few of any other astronomers were in agreement. Cassini's guess on the nature of the rings remained in doubt until 1857 when Maxwell proved that they could only be stable if they consisted of small particles.

Cassini's most important work was the determination of the parallax of Mars in 1672 when Mars was observed from two locations: Paris and French Guiana. The parallax of Mars could be used to calculate the distance of Mars and since the relative distances of all the known planets was known their actual distances could be calculated.

METEOR NOTES, by David Barnard.

The April Lyrids Meteor Watch held on the 19th April was cancelled because of bad weather but a count held by our correspondant at West Hanningfield on the Sunday recorded 14 satellites, 3 shower and 2 sporadic meteors during a one hour watch with two of his nieghbours.

The Meteor Count to observe the eta Aquarids on 3rd May was a success with nine members turning up and a total of 15 meteors were seen altogether, about half of them shower, in a period of about two hours.

This month there are two major showers:

1. The June Lyrids, ZHR about 8 with the max. on the 15th within the normal limits of June 10th to 21st. This shower is very favourable due to high altitude of the radiant and no moon.
2. The Ophiuchids shower with a ZHR of 6, the max on the 19th and the limits falling between the 17th and 26th, there will be a quarter moon around the maximum.

METEOR COUNT on SATURDAY JUNE 14th to observe the LYRIDS Meet outside the Levington Ship at 10p.m. irrespective of weather conditions. Do not forget to wrap up warm and bring a deck chair.

WEATHER PHENOMENA.

Now that the light nights are coming and we will only be able to do star gazing very late at night and in the light of the articles in the last two Journals about the Aurora Borealis and the Moon's halo I thought that I would do a little article about weather phenomenon which you might look out for.

Clouds and sunset colours provide some of the most wonderful spectacles of Nature, but there are also other weather phenomena that far surpass anything that man can devise on the earth below.

As we all know, the rainbow is associated with showery weather and always appears in the opposite point of the compass to the sun. We are usually able to see two bows; the larger one is called the 'secondary' and the smaller one the 'primary' bow. In each bow the colours occur in reverse order. Those usually visible are:

Primary (reading from outer band): Red, Violet or blue.

Secondary: Violet or blue, red.

Sometimes we are lucky enough to see a particularly brilliant rainbow, and then there are visible seven colours that vary between violet-blue, green-yellow or orange and red. On the ground we are only able to observe the half-circle, but if we were in an aeroplane at a sufficiently high altitude we would be able to observe the complete rainbow circle.

When a rainbow appears after the first shower during a spell of fine weather, it is usually a sign of a coming change to a more unsettled type. During an unsettled spell, a rainbow appearing in the evening denotes an improvement in coming weather conditions.

Some sky spectacles are caused by dust particles in the atmosphere and molecules of the air on which the sun's rays fall. Very rarely you may see a 'sun pillar' which appears as a column of either red or white light extending vertically above and below the sun, and sometimes this is crossed by a similar horizontal bar. When it forms a complete cross in this manner, it is called the 'heavenly cross', but this phenomenon is very rarely seen in the British Isles. A sun pillar is caused by the reflection of the sun's rays on the vertical sides of columnar crystals in the atmosphere. Under similar conditions, a 'moon pillar' is occasionally seen.

cont...

During a showery spell you may sometimes observe lines of watery-looking light radiating from the sun. We speak of this as 'the sun drawing watery' and the meteorological term for this is 'crepuscular rays'.

A fairly common spectacle is that of a sun or moon halo and is seen when the sun or the moon shines through a thin whitish veil of cirrostratus and is produced by the reflection of the light of the sun or the moon through ice crystals in the atmosphere. It appears as a faint ring around the sun or moon and varies in size and colour. The space inside the ring is very faint and appears white, but if it is more strongly defined you are able to see a red tint on the inner edge and yellow on the outer.

Although most haloes are circular about the sun or the moon, this is not always the case, as some pass through the sun and others are circular about the zenith.

Another sky phenomenon is known as the 'Green Ray', it appears as a very brilliant emerald coloration on the very last edge of a setting sun, or on the very first edge of the rising sun.

There is also a glow sometimes seen in the sky opposite the sun, only slightly lighter than the general illumination in the sky, and roughly circular or elliptical, which goes by the strange name of the 'Gegenschein'.

Considerable quantities of dust in the air, such as may occur after some volcanic or similar eruption of sufficient magnitude, will often cause strange sky spectacles. A blue sun was reported from many parts of the world after the great Krakatoa eruption. The sun appeared during the midday hours, shining a deep azure blue; at sunrise it was a bright light blue, and at sunset a dark blue. This was caused by the sun shining through the dense collection of dust particles in the upper atmosphere, which had been carried to a great height as a result of the eruption.

A blue sun has also been reported shining through the haze for two or three days at a time after some of the great

dust-stormes over the Sahara and other wide desert areas. Sometimes the colour is yellow as was seen over Cairo during a great dust storm. The sun shone through a pale yellow colour, while the tints in the area immediately around it were pale blue. At night the moon was also pale yellow, but with a similar blue circle around it.

Among other types of unusual weather phenomenon must be mentioned coloured snow and rain. Rain has been known to fall as red or blue as it did during March 1935 in the Shetland Isles after a heavy thunder storm as was described as looking 'very much like blue-black ink diluted with water'. The explanation was given as being due to the particular atmospheric conditions in that locality which were highly polluted. There have also been many reports of coloured rain in Italy and on one occasion red rain fell in Bordighera. Red rain has also been reported falling in New Zealand. One such an occasion was on 26th Oct, 1929 which was preceded for two days in the South Island by a curious smoky haze which disappeared after a storm of red rain. The only time red rain has fallen over England was on the 21st and 23rd February 1903 which it was believed was caused by dust in the atmosphere which had been blown from the Sahara in a great storm and carried northwards to Europe.

Coloured snow has also been similarly reported from various parts of the world, usually red or green and sometimes yellow or brown. These colours are caused by minute vegetable organisms known as 'Protococcus Nivalis'.

So during the light night skies keep looking up and we might see some of these unusual weather phenomenon this year.

R.M.C.

JULY'S JOURNAL

Deadline for articles for July's Journal is first post on Monday 23rd June. Any items for inclusion in the Journal should be sent A.S.A.P to:-

R.M. Cheesman, [REDACTED],
WEST HANNINGFIELD, Chelmsford, Essex or
sent to 3 Tasmania Road, Ipswich to arrive by Friday 20th.

NEWS REVIEW - JUNE 1980.

report by Simon Harvey.

As with last month, circumstances only permit a short 'News Review' again. Titles are listed below, and anyone wishing to find out more please contact me. Many thanks again to the contractors and organisations for supplying the material for this report.

- APRIL: Spacelab Experiments at installation and Test Phase (ERNO)
 " IUS Test firing successful.
 Shuttle alunch draws near as SRB powered for first time.
 (CSO of UTI)
- APRIL 18 'Frisbee' method to be used for LEASAT (Hughes)
 " 18 COMSAT/SEARS end talks on SATCOM TV (COMSAT)
 " 18 NASA seeks launch in Jan/Feb 1981 (COMSAT)
- APRIL 25 - 26th Investigations selected for atmospheric studies
 by satellite (NASA)
 " 25 FCC moving towards reorganisation of COMSAT (Washington
 Star/COMSAT)
 " 25 Europeans building TV satellite system
 (AVIATION WEEK/COMSAT)
 " 28 OSTA-1 in 'award winning' KSC Systems integration Test
 (ROCKWELL SSG)
 " 30 House Committee says space is 'insuffience and
 Inadequate' (AEROSPACE DAILY/COMSAT)
- MAY
 NASA honours eleven from Houston (McDONNELL DOUGLAS)
 1 Shuttle Columbia's flight engines to be retested
 (NASA)
 5 Carter thretens INTELSAT sactions
 (SATELLITE WEEK/COMSAT)
 " 5 SBS applies Launch (SATELLITE WEEK/COMSAT)
 " 5 Satellites played role in Hostage Rescue try
 (AEROSPACE DAILY/COMSAT)
 " 5 NASA Scientists work on Motion Sickness Prevention
 (NASA)
 " 6 Honduras joins INTELSAT (INTELSAT)
 " 6 15th Moon of Jupiter discovered (NASA)
 " 7 RCA Astro-electronics receive two awards for Space
 Shuttle Systems (RCA)

MAY 8 Experiments chosen for first Spacelab flight (NASA)
 " 13 Sea Surface Sensor for COMMS (BAeD)

for further information please write to:

Simon G. Harvey,
 [REDACTED],
 NEEDHAM MARKET,
 Ipswich,
 Suffolk, IP6 8AC.

UNTIL THE COWS GO HOME:

At the Committee Meeting held at the Observatory on Sat. 24th May it was decided to keep the 'Barrell Telescope' as part of the Observatory's equipment and that because we had so many eyepieces in many boxes to calibrate the best eyepieces for each telescope. A clear bright day was chosen (next day, Sunday) to do the calibrating. Mr. A.J. Smith made up a huge ball covered in funny markings (could not spell hyroglifiks) and placed it some distance away from the observatory. On wandering back across the Orwell park and up to the telescope they found to their horror that the ball was surrounded by cows! After waiting for an hour or so the cows still seemed fascinated by the ball and would not leave it alone. The eyepiece calibration party then postponed the idea, no one daring to retrieve the ball. We have heard that there is a cow for one in every household but it seemed as if all England's was there!

GREENWICH TRIP:

At the last Committee Meeting it was proposed that as we had had no concrete offer to let us view various places of astronomical interest in our yearly 'day out' that we should try to organise another trip to Greenwich. At the moment we are investigating the idea and hope that it will take place on SATURDAY 6th SEPTEMBER: Full details will be advertised in the Journal A.S.A.P. but meanwhile David Barnard, [REDACTED], Ipswich, phone Ipswich [REDACTED]. is taking names and numbers

MEMBERSHIP LIST

as at 9th May, 1930.

A. Arbon, [REDACTED], Ipswich.
 D. Aguirregoicoa, [REDACTED], Ipswich.
 I. Angus (Hon. Member) c/o Orwell Park School
 R. Adams, (Trustee) [REDACTED], Ipswich
 M. Aspen, [REDACTED], Ipswich.

D.A. Baker, [REDACTED], Parsons Heath.
 C.R. Bradley, [REDACTED], Ipswich.
 D. Barnard, [REDACTED], Ipswich.
 M. Barriskill, [REDACTED], Ipswich.
 Mr. & Mrs. D. Bearcroft, [REDACTED], Ipswich.
 J. Belton, [REDACTED], Ipswich.
 A. Bradley, [REDACTED], Ipswich.
 D.M.J. Brown, (Trustee) [REDACTED], Ipswich.
 G. Buckley-Jones, [REDACTED], Ipswich.
 C. Button, [REDACTED], Ipswich.
 P. Burt, [REDACTED], Ipswich.
 F. Byers, [REDACTED], Trimley St. Mary, Ipswich.

F. Chatfield, [REDACTED], Holbrook, Ipswich.
 R.M. Cheesman, [REDACTED], Ipswich.
 E. Collinson, [REDACTED], Playford, Ips.
 M. Cook, [REDACTED], Ipswich.
 C. Cornelius, [REDACTED], Ipswich
 W.J. Crooks, [REDACTED], Felixstowe.

T.A. Day, [REDACTED], Elmsett, Ipswich.
 J.R. Downey, [REDACTED], Ipswich.

J. Easty (Trustee) [REDACTED], Melton.
 F.M. Evans, [REDACTED], Stutton, Ipswich.

R. Fogg, [REDACTED], Ipswich.
 J.A. Foster, [REDACTED], Stonham Aspel
 J. Fleming, [REDACTED], Ipswich.

N. Gage, [REDACTED], Felixstowe.
 D. Gentry, [REDACTED], Ipswich
 Miss C.A. Gladding, [REDACTED], Ipswich
 R. Gooding, [REDACTED], Ipswich

K. Harris, [REDACTED], Ipswich.
 S. Harvey, [REDACTED], Needham Market.
 J. Holt, [REDACTED], Ipswich.
 J. Hood, [REDACTED], Ipswich

W. Last, [REDACTED], Ipswich.
 M. Laurie, [REDACTED], Walton, Felixstowe.
 Mr. & Mrs. R. Markham, [REDACTED], Ipswich

M.J. Nicholls, [REDACTED], Ipswich.

P.G. Parish, [REDACTED], Ipswich.
 K. Patterson, [REDACTED], Ipswich
 D. Payne, [REDACTED], Wickham Market.

C. Radley, [REDACTED], Wherstead, Ipswich.
 Mrs. D.M. Randle, [REDACTED], Ipswich.
 J. Ranson, [REDACTED], Ipswich.
 Miss. C. Rudd, [REDACTED], Ipswich.

K. Sanigar, [REDACTED], Barrow, Bury St. Edmunds.
 M. Siggers, [REDACTED], Ipswich
 A.J. Smith, [REDACTED], Ipswich.
 P. Smith, [REDACTED], Ipswich.
 R. Spooner, [REDACTED], Wivenhoe, Essex.
 F.J. Steward, [REDACTED], Ipswich
 M. Stow, [REDACTED], Ipswich.

R. Townsend, [REDACTED], Stevenage, Herts.

V. Wilkes, [REDACTED], Ipswich.
 D.A. Wilkinson, [REDACTED], Woodbridge, Suffolk.

R. Young, [REDACTED], Bury St. Edmunds, Suffolk.

I. Edwards, [REDACTED], Kesgrave } new members this month
 Miss S. Letch

ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

MEETINGS FOR JUNE 1980

AT THE OBSERVATORY, ORWELL PARK NACTON.

TUESDAYS: from 7p.m. Solar, Lunar & Planetary Section.

Directors: Mr. J. Hood, [REDACTED], Ipswich,
Mr. J. Ranson, [REDACTED], Ipswich

Tel: Ipswich [REDACTED]

Mr. M. Barritt, [REDACTED], Ipswich.

3rd 10th 17th and 24th.

WEDNESDAYS: from 8p.m. Nebulae & Faint Objects Section.

Directors: Mr. D. Payne [REDACTED],
Wickham Market, Tel: Wickham Mkt. [REDACTED]

Mr. M. Cook, [REDACTED], Ipswich,
Tel. Ipswich [REDACTED]

4th and 18th

SATURDAYS: from 8p.m. General Observations Section.

Directors: Mr. M. Barriskill, [REDACTED], Ipswich
Mr. R. Adams, [REDACTED], Ipswich

Tel. Ipswich [REDACTED]

7th & 28th.

SATURDAYS: METEOR SECTION

Director Mr. D. Barnard, [REDACTED], Ipswich
Tel. Ipswich [REDACTED]

JUNE LYRIDS METEOR WATCH

Saturday 14th June, meet OUTSIDE the 'Levington Ship'
at 10p.m. irrespective of weather conditions.

ANYBODY & EVERYBODY WELCOME TO COME ALONG FOR
AN HOUR OR SO TO OBSERVE THIS SHOWER.

SATURDAY

Committee Meeting on 21st June at 8p.m.
Committee Members only. Meeting to be held
at the Treasurer's House.