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NOTTINGHAM ASTRONOMICAL SOCIETY

B U L L E T I N

NO. 14

SEPTEMBER, 1947.

COMMENT.

A sincere apology is offered for the considerable delay in circulating the August issue of "The Bulletin". An unfortunate delay "in the press" was followed by an even more dismaying hold-up in transit through the Post Office. The circumstances of the delay are such that your Secretary confidently expects the time-lag between preparation and distribution of "The Bulletin" to be considerably smaller in future!

Arrangements are in hand for a visit to Cambridge University Observatory next month on the lines of our enjoyable trip to Rugby last May. Cambridge University has one of the largest observatories in the country, outside London, and with the adjoining Solar Physics Observatory musters equipment all amateur astronomers will wish to gloat over!

The principal instrument is a 36" reflector, only equalled in size in the U.K. by Greenwich and Edinburgh Royal Observatories. The 25" Newall refractor, a duel instrument comprising a 15" refractor and a 18" Cassegrain reflector, and a spectrohelioscope complete the main items of equipment of the Solar Physics Observatory. At the University Observatory, the attractions are an 8" refractor, the 12½" Sheepshanks Coude telescope, and the famous 12" Northumberland refractor. This latter telescope is of great interest as the actual telescope used by Professor Challis to search for Neptune in 1846 as a result of John Couch Adams' theoretical work on the perturbations of Uranus. How LeVerrier and Dr. Galle forestalled them was described in the President's address on the occasion of the centenary of this great event last September.

Details of the visit are announced in this issue of "The Bulletin", and the advice to all is "Apply Now"!

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THE SKY IN OCTOBER.

The Julian Date for October 0 is 243 2459. For other dates add the date.

The Sun

Solar rotation No. 1258 began on Sept. 23. Rotation No. 1259 begins on October 21. Activity is still at a high level, and major auroral displays are still to be expected.

The Moon

Moonlight interference still occurs at the beginning and end of the month. There is an occultation of a group of stars just North of the Hyades on the 31st, after midnight; the moon being just past full.

Planets

Venus remains in about the same aspect as last month, setting within half an hour of the Sun.

Jupiter has disappeared from useful view.

Uranus is up most of the night just north of Zeta Tauri.

Mars is prominent below Alpha and Beta Geminorum, but the telescopic disc is still only 6 seconds of arc. On the nights of the 11th, 12th, 13th and 14th it passes through the Praesepe cluster and the movement of the planet will be very apparent - about 1¼ min. arc every hour, or its diameter in about five minutes of time.

Saturn is fairly well placed in the morning sky. The rings have closed remarkably since the planet's disappearance in the spring.

Comets

Encke's Comet has been re-detected near its predicted place. Corrected positions

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for the moonless part of October at 12 hrs. GMAT. are:

Oct.	5	6h.	57m.	N.47°.3	Oct.	13	8h.	50m.	N.45°.8
	7	7h.	22m.	N.47°.6		15	9h.	22m.	N.44°.0
	9	7h.	50m.	N.47°.5		17	9h.	52m.	N.41°.7
	11	8h.	19m.	N.46°.9		19	10h.	22m.	N.38°.7

It then turns rapidly south and will disappear into the morning twilight during November. Its brightness during the October period is about 10th magnitude, and it may brighten rapidly, but is unlikely to reach naked-eye visibility even in November.

Meteors

The famous and complicated Orionid shower reaches maximum on the 20th and 21st with very little interference from the moon. They are swift and brilliant meteors and leave streaks like the Perseids, but the number per hour is unlikely to exceed 10.

Variable Stars

Convenient minima of Algol occur on Oct. 1 at about 10h. GMAT, Oct. 4 at about 7h. GMAT, Oct. 21 at about 11h. GMAT, and Oct. 24 at about 8h. GMAT. Will observers, and would-be observers, use these for practice. No optical aid is required and charts will be printed for anyone who sends a post-card before the meeting.

O Ceti field is now conveniently placed. The Star is at present faint, but minimum must be well passed.

A.W. LANE HALL
Director, Observing Section.

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SEEING STARS AND PLANETS IN DAYTIME

by

R.F.T. Granger, F.R.A.S.

For those who wish to use their telescopes in the summer months, it is an entertaining, and for the beginner, a valuable and practical, exercise to find the brighter stars and planets in daylight. Useful work may be done in this way on the accurate alignment of your equatorial if you have one, and Venus and Mercury may be studied at least as profitably in full daylight on the meridian as low down on the horizon in the twilight.

Celestial objects may be found in daylight with little difficulty with an ordinary altazimuth telescope of upwards of $2\frac{1}{2}$ inches diameter at the time they cross the meridian. The only equipment required is a good sized protractor to measure the altitude and an almanac, preferably the Nautical Almanac.

To find the time at which your star will be due south, first look up the time of transit of the First Point of Aries. Add to the Right Ascension of your star (the R.A. is simply the number of hours, minutes and seconds it transits after the First Point of Aries), but before doing so the R.A. which is given in sidereal time must be converted to the equivalent mean solar time by means of the table on Page 537 of the Nautical Almanac. You now have the time of transit at Greenwich, and to get the time of transit on your own longtitude you must add 4 minutes for each degree West.

For the altitude of your star above the horizon when due South add the complement of your latitude to the star's declination. For example, take the transit of Arcturus on August 7th at my observatory at Bramcote, Long.1°14' West; Lat.52°56' North.

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	Hrs.	Mins.	Secs.
Transit of First Point of Aries	3	0	49
R.A. Arcturus = 14h.13,15s = Mean Solar Time	14	10	55
Add for 1°14' West longitude		4	55
GMT. of local transit	17	16	39

Declination	19°27'
Complement of Latitude	37°04'
Altitude when South	56°31'

The Nautical Almanac gives directly the time of meridian passage of the planets.

To align your telescope, set up the tripod as level as possible and mark the position of the feet for future use. Find due South by setting your telescope on a star you know as it transits at night, and then in daylight note a distant landmark or make a mark on a wall in the same line as a permanent south point.

To get the correct altitude fix a good sized protractor in a slot in a stick and bind it to your telescope near the eye-end so that it hangs vertically underneath. Then a plumb line passed through the centre will enable you to measure the required altitude with sufficient accuracy.

Now for a few practical hints.

Focus must be accurate. Find it on a star at night and mark the slide.

Use an eyepiece giving you not more than a 1° field. This is enough to give you an adequate margin of error. A faint object may be easily missed in a larger field, and objects stand out better with a higher than with a lower magnification.

Know how long a star takes to cross your field so that you may know exactly how long you have to look for it. If it fails to appear, move your telescope very cautiously up and down a little. If the movement is at all rough, your star may flash through the field without being noticed.

Be sure the sky is really clear. If it looks whitish round the Sun there may be a veil of cirrus quite enough to obscure the stars.

Start with an object you know is within your power. Venus is best and can be seen with a very small telescope except when very near conjunction. A 2¼" will show the brightest stars like Vega, Arcturus, Capella and Sirius, though with difficulty, and only when they are well away from the Sun. Mercury is usually difficult and needs a rather larger aperture. Its phases can be seen well with a power of x70.

It would be interesting to know what can be seen with larger apertures. I have seen the ring system of Saturn on a summer afternoon using a polaroid filter in my 10" reflector, an entertaining observation however devoid of practical value.

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NOTES AND ANNOUNCEMENTS.

Visit to Cambridge Observatory.

A visit is being arranged for Sunday, October 26th, 1947. A coach will depart Trinity Square at 9 a.m., returning for 9.30 p.m. The return fare will be 14/- and a limited number of seats will be reserved for Juniors at half-fare. It is hoped to arrange accommodation for meals at Cambridge on the same lines as on the Rugby excursion.

Further details will be announced at the next meeting, but members interested in the trip are requested to notify the Secretary as soon as possible if they wish to reserve seats on the coach.

The number of seats will be limited and since members' friends and relatives are

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also invited, early application is advisable.

The Bulletin.

A number of copies of the earlier issues of "The Bulletin" are available and may be obtained on application to the Secretary.

Annual General Meeting.

The Annual General Meeting takes place in the Mechanics Institution, Nottingham, on Thursday, October 2nd, 1947, at 7.30 p.m.

All members are urged to attend in view of the importance of the various items on the Agenda which need full discussion.

A copy of the Agenda is circulated with this "Bulletin".

In addition to the business, the Meeting will include Mr. Lane Hall's talk on the Sky in October and the usual opportunity for informal discussion.

Election of Officers and Committee.

The final nomination list for the election of Officers and Committee for the Session 1947-48 accompanies this "Bulletin". The election will take place at the General Meeting and any objections should be received by the Secretary as soon as possible.

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NOTTINGHAM
20 Sept. '47.