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Observing Skylab

At first I was led to believe that Skylab could not be seen from East Anglia, partly because James Burke said so (as usual, he was rather badly informed) on TV, and because one morning I arose at 3 AM to see the vehicle, without success, probably because the sky was too bright.

However, one evening night while staggering home I noted two bright objects traversing the sky. I shook my head to clear myself, but they were still there, obviously artificial satellites. "They can't be Skylab" I said to myself, but they were! Since then, it seems, that not only is Skylab visible from East Anglia, but it is visible EVERY NIGHT, perhaps even twice in a night, or three times if you are exceptionally lucky. There is not only Skylab, there are several objects visible to the naked eye, of first or second magnitude. The Skylab & Skylab second stage launching rocket (which also went into orbit) are visible, alongside several bits of debris associated with the Skylab or rocket. Several people have told me about their observations of Skylab, and I list them below. Please, if you want to see Skylab, let me know and I shall arrange it for you. Also, if you have seen Skylab, let me have details of your sighting, I will be most interested in them:-

Saturday June 23rd Skylab & a fragment observed by C. Radley at [redacted] 22h05m UT.

Saturday June 30th (ECLIPSE DAY !!!) Observed 3 Skylab objects, first at 21h15m U.T.

At the same time, Roy Cheesman (as well as C. Radley) observed them. The third object fluctuated in brightness. Alan and John Cox observed the same objects also.

John Easty also observed Skylab on several nights.

Wednesday July 4th David Bearcroft, C. Radley, and another member, Graham, staggered into a deserted (almost) country lane at 11 o'clock (BST) amidst bats, a graveyard, and a nearby car with something going on inside. We saw Skylab appear right on schedule. It was a very pleasant evening.

REPAIRING THE OBSERVATORY In June and July a great deal of work was done in repairing the observatory. The observatory, stairs, transit room, and club room were all given new lights, with a dinner knob in the observatory. The floor of roof of the transit room were repaired. Repairs were commenced on the dome which had collapsed. Many other repairs were done also.

MEETINGS Public Meetings are being arranged for the Autumn & Winter of 1973/4. They will be held on the first FRIDAY of each month at THE FRIENDS MEETING PLACE, 39 Fennerau Road, Ipswich, at 7.30p.m., although there will be people there beforehand. Refreshments will be on sale.

The following meetings have been arranged:

OCTOBER 5th, Mr. G. E. Curtis will be talking to the society, on a subject yet to be decided. NOVEMBER 2nd, Mr. Hendrie will be talking to the society on COMETS, in particular COMET KOHOUTEK which will be coming in the winter.

There is no admission fee of course. PLEASE BRING FRIENDS. There will be a discussion of course after each meeting. Other meetings are being arranged.

LATE NEWS: At last an elusive "Black Hole" in space, or Collapsar, has been apparently discovered. Suspected for some time, Cygnus X-1 (an X-ray star) was revealed as a collapsar by an X-ray telescope on satellite Copernicus (Orbiting Astronomical Observatory-3). The telescope was built and used by one of the London Universities.

WE WOULD LIKE TO WELCOME SEP CRADDOCK, [redacted], Ipswich, into the society.

OBSERVATORY STATUS

At the time of writing, the Observatory at Orwell Park School is still out of action. Horace Dall telephoned me a progress report on the objective glass. He says that he has found it badly overcorrected for SPHERICAL ABERRATION. Rays coming through the centre of the lens arrive at a focal point separated by about half an inch from the focal point of the rays coming through the edge of the lens. Although this does not sound a great error when considering the entire focal length to be thirteen feet, this is in fact pretty bad, being about the same as the focal length of the eyepieces, accounting probably for the difficulty in splitting double stars. Correcting this error will involve some refiguring which will also clear up some localised zones of poor figure giving zonal aberrations. The Achromatic Aberration is very slightly overcorrected, but is nothing to worry about. He discovered that one of the eyepieces was a micrometer eyepiece, but that the wires had been broken. He has not been able to tell me when the lens can be returned at the time of writing. More details of when the Observatory should be in action should be found on the front page.

In early July, an Electrician will come up and totally re-wire the Observatory, Transit Room and Club Room, fitting in new lights and dimmers where necessary, and new mains sockets and meter.

ASTRONOMICAL MEETINGS

There will be a Provincial meeting of the British Astronomical Association on the afternoon and evening of September 15th (a Saturday) in Norwich. Full details in the September edition.

There will be a coach trip to visit the Old Royal Greenwich Observatory in London at a cost of about £1.00 per person. For full details see previous editions of this newsletter. If you wish to go, please send in the application form enclosed in this and previous editions of the newsletter, to; Roy Cheeseman of [redacted], Ipswich. In the afternoon we will be able to see a showing at the Greenwich Planetarium. You will probably have to make your own arrangements for lunch. THIS IS YOUR LAST CHANCE TO BOOK A PLACE ON THIS TRIP.

TO MEMBERS

Just in case you happen to be moving from your present address, please let me know where and when, so that I can make arrangements for letting you have your newsletters. Several members have changed their addresses in the past year or so, and I thank them for letting me know.

OBSERVING SKYLAB

Until now, I have not mentioned anything about seeing Skylab from Ipswich, because I was led to believe that it was invisible from here. However, on Saturday 23rd June I saw it!!! To be more precise, I saw the Skylab Station proper (Object No. 73/027/01, designation. Skylab) and also not far away I saw 73/027/19, designation. Skylab Object (K). What Skylab object (K) is I am not sure, it could be one of the fairings from the Skylab 1, Saturn 1b rocket.

Other objects visible from Earth are: 73/027/02, Designation: Skylab Rocket, the second stage of the Saturn V used to launch Skylab, which went into orbit also. 73/027/05, Designation: Skylab Fragment (E), another piece of debris released from the station, 73/027/12, Designation: Skylab object (M), yet another fragment of debris.

Skylabs' orbit is inclined at about 51° to the Equator, so can never come North of the English Channel, however, it is at an altitude of some 270 miles (430 kms) so can be seen from places further North.

Skylab makes frequent passes over the Channel, so if you see a bright star-like object passing over the Channel but steadily across the sky from West to East via South, it is quite likely to be Skylab or one of the objects associated with it. Skylab is the biggest Satellite visible from Britain, being a 118' long cylinder, although Pageous-A, a balloon 100' across is also very prominent.

If you look to the South on dark evenings at every opportunity, you are quite likely to see Skylab.

MEETINGS AND LECTURES IN THE AUTUMN

Public Meetings, incorporating a Speaker and discussion in each are being organised for the Autumn. They will be in the evening of the first Friday of each month, starting October 5th, with Mr. G.E. Curtis talking on the Solar System. On November 2nd, Mr. M.J. Hendrie will talk on Comets, especially Comet Kohoutek which will be a brilliant naked-eye object in the Winter. Further speakers are being invited. As for the venue, it will be at the Friends Meeting Place, Fonnereau Road.

TOTAL ECLIPSE OF THE SUN

On June 30th, there was a total eclipse of the Sun, visible in Africa. Since the Moon was at perigee with a very large diameter and the Earth was at Aphelion giving the Sun a small diameter, the eclipse lasted a full seven minutes. An eclipse as long as that will not be visible for another 150 years. Many Astronomers from all over the world, including Britain, went to view the eclipse. The first results of the investigations and observations were reported at the July 18th meeting of the B.A.A. in London. Full details of that meeting and of the eclipse will either be published in this or later editions.

STARGAZING IN AUGUST

If you are one of those people who does not feel up to performing observational work for the B.A.A. and enjoys simply admiring the beauty of the various sights in the sky, then you will probably enjoy the stars visible in August.

August is my favourite month for "Stargazing". If you have a pair of binoculars (10 x 50's or 7 x 50's are best) there are all sorts of sights to see. With a good star atlas such as Norton's, you can spend many pleasant evenings trying to find various Messier objects. Many are completely beyond the scope of binoculars, but I have been surprised with what my binoculars have revealed. I have 'discovered' Messier objects with my binoculars which are marked in some star atlases, but which I have found no reference to in literature.

The Milky Way extends from the Southern Horizon, from the constellations of Sagittarius and Scorpius, up through Aquila, and to Cygnus almost overhead, Cassiopeia and Perseus. Less conspicuous but interesting constellations included in the Milky Way are Scutum, Sagitta and Vulpeca. Delphinus is a pleasant sight through Binoculars or the naked eye.

If you do not have one, obtain a star map, and use it to find M.11. in Scutum, M.39 in Cygnus and M.27 in Vulpeca. All fairly easy to find with binoculars.

You could also turn your gaze to the Southern Horizon if it is clear and find M.23 and M.8 in Sagittarius, both easy to find and pleasant to look at.

WHATS UP ? THE PLANETS IN AUGUST

In the last edition of this newsletter, I gave some details of the Apparition 6 of Mercury during August which you can refer back to. The declination of the planet throughout the apparition

is moderately favourable, being about 18° North throughout. It will be visible in the Eastern sky before dawn during the first three weeks of August. The date of maximum elongation will be August 8th when the planet will be 19° from the Sun and between the constellations of Gemini and Cancer. It will rise at about 03.20 hours U.T. (04.20 a.m. B.S.T.) at the start of August, about 03 hours U.T. (04. hours B.S.T) on the couple of days around maximum elongation from the Sun and about 04 hrs U.T (05 hrs B.S.T) on August 24th, towards the end of the apparition. The easiest time to see Mercury with the naked eye or binoculars will be on the date of maximum elongation and the few days following.

At the start of the Apparition the planet will not be far from Saturn in the sky. In a small telescope the planet will not appear as anything more than a point of light.

If you wish to find Mercury, get up about ten minutes before it rises and trace the constellations of the ecliptic backwards finding Gemini and Cancer. In Gemini you will see Saturn as a bright star. Find Orion, look above it for Tauars, with the Pleiades, then trace a line from the Pleiades thru Saturn and Gemini towards the Eastern horizon, and that is roughly where Mercury should appear, slightly North of East.

VENUS

Is an evening star, not very well seen at the moment.

MARS

Is in Pisces, and is about magnitude -1. Rising at about 22 hours U.T (23 hours B.S.T.) at the beginning of the month, and at 20 hr 30 m. U.T. (21 hr 30 m. B.S.T.) at the end of the Month. It rises about the same time as the sky becomes dark.

JUPITER

Is a brilliant object this month. It rises in the East after Sunset and is visible all night. It is a brilliant object in Capricornus.

SATURN

Is becoming visible in the early morning sky a few hours before dawn. It is in Gemini.

METEORS

As mentioned in last month's edition, quite a few meteor showers this month. If you are out stargazing for an hour or so, you are quite likely to see a few. The most notable shower is the Perseids. Lasting until August 18th, maximum can be seen on the evening of August 12th. Unfortunately there is a full Moon this month which interferes.

THE MOON

After new Moon on July 29th, it should be seen as a thin crescent in the South-West shortly after Sunset. First Quarter occurs on August 5th in the evening. Full Moon is on August 14th. Last Quarter is on August 21st. New Moon again on August 28th.

THE FOLLOWING ARTICLE WAS SUBMITTED TO ME BY IAN RIDPATH

Editor of "Hermes" the popular Astronomy magazine. I would very much like to receive articles, not necessarily of such a high standard as this one, from Members of the Society, about any aspect of Astronomy. Also you can include your advertisements FREE to me for publication.

Author: Ian Ridpath
Editor of "Hermes", Britains popular Astronomy magazine.

PEOPLE PROBLEMS

They called May 12th Population Day in Britain. Next year is World Population Year. The colony on planet Earth is straining at the seams.

A terrifying look at the future prospects for population on this planet was given in a recent issue of Scientific American by Thomas Frejka of the Population Council in New York. Terrifying because Frejka's report was optimistic in tone. And yet it still shows that there is no reasonable hope of stabilizing World Population before it has doubled.

The science-fiction vision of evacuating our people to colonies on other planets is hopelessly inadequate. By the year 2100 there may be 8,400 million humans on this Earth. Many people consider the current 3,700 million to be too high.

Can we achieve zero population growth by the year 2000 asks Frejka?. The Answer is: Only if each new family immediately restricts itself to an average of one child. The current World average is nearly five times this figure.

The so-called 'replacement level' of fertility is two children per family. Even if this figure were reached today - as has been the case in the United States - World population would still grow for several generations because more people are currently entering reproductive age than are dying. Over one third of our planet's population is under fifteen years old, Frejka points out.

If nothing is done to reduce the current World birthrate, there would in theory be ten times as many people alive a century from now. But in practice, natural disasters would cut this figure cruelly. Some see the current Indian famine as a harbinger of World collapse.

Astronomers should be able to see the problem as clearly as anyone. An Astronomical viewpoint gives a perspective on the fragile nature of planet Earth. Astronomers are already concerned that there is a lack of open countryside in which to site telescopes, and that city glare spoils viewing. More importantly, costs are rising inexorably. Things will get worse before they improve, and they will not improve in our lifetimes.

No advanced civilization would colonize a planet without controlling its numbers. We are the colonists of planet Earth....

THE LIGHT FANTASTIC

What to do about the increasing sky glare caused as city sprawl lights up the night sky? In the United States, where dark country skies still exist in some parts, the increasing urbanization is a greater threat to astronomers than in Britain, where few habitable areas exist that are free from sky fog.

But as booming population forces American cities farther out into the surrounding country, there is a real deterioration in the observing conditions at the great mountain-top observatories of the Western U.S. 'California, in particular,' observed Time magazine, 'is now becoming an astronomical disaster area'. Dr. Burt Nelson, Chairman of the Department of Astronomy at California State University, San Diego, has written 'The problem of light pollution for observatories has become so monstrous that most astronomers view the situation in the United States as terminal. It may well be that the end of optical Astronomy in the United States is inevitable.'

In 1970, Lick Observatory had to choose an additional site, as their Mount Hamilton base is too affected by smog and sky brightness from nearby San Francisco for many kinds of work. Mount Wilson is badly affected by lights from Los Angeles, and even the more remote Mount Palomar loses a tenth of a magnitude at the zenith because of artificial lights from Los Angeles and San Diego.

The Tucson region of Arizona has sprouted an impressive series of large telescopes in recent years, particularly the 158 inch reflector at Kitt Peak. To preserve the darkness of the night sky for these valuable instruments, the city of Tucson last year passed an order demanding the shading of all new outdoor lighting and the filtering of lamps with high output in the ultra violet. These restrictions were agreed upon by the Tucson city council after three years of discussion with the representatives of the local astronomical community.

Dr. Burt Nelson is now urging an extension of this work, which he feels will receive support from non-astronomical environmentalists. 'Good observatory sites constitute a precious national resource,' he says. In an article entitled Can We Save What's Left of the Dark? in the Astronomical Society of the Pacific's magazine Mercury, he recommended that all interested parties should combine to ensure that areas around observatories

development and strict light control. are master planned for low-density

Now, Mr. Ray Weymann, director of Tucson's Steward Observatory and president of the Astronomical Society of the Pacific, has recommended that the ASP and the American Astronomical Society were together on the problems of light pollution. The skies will continue to get brighter; but firm action will slow the rate of brightening to extend the useful lifetime of millions of dollars' worth of equipment.