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Oct-Nov. 97

Amateur Astronomers' Association (Bombay)

C/o. Department of Physics, St.. Xavier's College, Mumbai 400 001.

Reg. No. Bom-532/77 G.B.B.S Dated :8-12-77 Under the Societies Register. Act. 1860

Editorial *Sept 27. 1997.*

Dear Members,

We are now at the end of the monsoon season and are prepared to pursue our interest in Astronomy in forthcoming observation season. During the monsoon, we have had an excellent Total Lunar Eclipse and I am quite sure many of you must have observed it and photographed it. Our Association had announced a public contest in photographing the event. Let us hope we get a good response.

During this monsoon season, we had a major event of holding an Annual General Meeting (AGM). A new Executive Committee has been elected by the members. Let us extend our hearty welcome to our new President Mr. Deepak Bhimani, an industrialist with very keen interest in Astronomy. On this occasion, I also take an opportunity to thanks our immediate past President , Prof. R V Kamat, who was the President of the Association from the inception of the Association for having provided continued guidance and direction to the Association's activities. I also thank other members of the previous committee. Moreover, I also welcome the new members of the Executive Committee.

In the coming months, the Association plans to organise two-days workshop in Astrophotography and a certificate course in Basic Observational Astronomy. Those interested are requested to submit their names to Mr. Aadil Desai or Mr. Dilip Vyas.

Moreover, at the AGM, the proposal to increase the membership fees was passed to basically cover the increased cost to service the members due to inflation.

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Field Trip Instructions

Those members who want to visit Vangani for overnight sky observation must gather at 3.30 p.m. in front of A H Wheeler Bookstall, C S T Railway station. Warm sweaters, socks, closed shoes, torch, red cellophane paper, skymaps, food, water and a plastic mat will be the most essential items.

Programmes for Oct. and Nov. 97

Date	Program
Sept 27	3.30 p.m. Library Day
Oct. 11	3.30 p.m. Library Day + Lecture
Oct. 15/16	Occultation of Moon/Saturn at 9.30 p.m.
Oct. 25	3.30 p.m. Library Day + Lecture by Dr. M N Vahia of TIFR on 'Environment around black holes'
Nov. 1	3.30 p.m. Field Trip to Vangani
Nov. 8	3.30 p.m. Library Day + Lecture
Nov. 22/23	Exhibition of Comet Hale-Bopp Observation Program. St. Xavier's College, Bombay (Tentative)

Planetary Information for Oct/Nov 97

Jupiter

Date	Rise	Set	Mag.	Constellation
01/10/97	15:21	2:37	-2.6	Capricornus
15/10/97	14:26	1:42	-2.6	Capricornus
1/11/97	13:22	0:39	-2.4	Capricornus
15/11/97	12:32	23:46	-2.4	Capricornus
29/11/97	11:44	23:00	-2.4	Capricornus

Saturn

Date	Rise	Set	Mag.	Constellation
01/10/97	18:57	7:15	0.2	Pisces
15/10/97	17:58	6:16	0.2	Pisces
1/11/97	16:47	5:03	0.2	Pisces
15/11/97	15:50	4:05	0.2	Pisces
29/11/97	14:53	3:07	0.2	Pisces

Mars

Date	Rise	Set	Mag.	Constellation
01/10/97	18:57	7:15	1.1	Libra
15/10/97	17:58	6:16	1.1	Libra
1/11/97	16:47	5:03	1.1	Scorpius
15/11/97	15:50	4:05	1.1	scorpius
29/11/97	14:53	3:07	1.1	Scorpius

Venus

01/10/97	9:41	20:49	- 4.2	Libra
15/10/97	9:58	20:52	- 4.3	Libra
1/11/97	10:15	21:01	- 4.4	Scorpius
15/11/97	10:21	21:07	- 4.4.	Scorpius
29/11/97	10:16	21:08	- 4. 4	Scorpius

Mercury

01/10/97	5:49	18:01	- 1.3	Virgo
15/10/97	6:38	18.21	- 1.5	Virgo
1/11/97	7:30	18:42	- 0.5	Libra
15/11/97	8:10	19:05	- 0.4	Libra
29/11/97	8:35	19:24	- 0.4	Libra

Uranus

01/10/97	14:53	2:04	5.8	Capricornus
15/10/97	13:58	1:08	5.8	Capricornus
1/11/97	12:51	0:02	5.8	Capricornus
15/11/97	11:57	23:05	6.0	Capricornus
29/11/97	11:04	22:12	6.0	Capricornus

Neptune

01/10/97	14:22	1:30	7.8	Sagittarius
15/10/97	13:27	0:35	7.8	Sagittarius
1/11/97	12:20	23:25	7.8	Sagittarius
15/11/97	11:26	22:31	7.8	Sagittarius
29/11/97	10:32	21:38	7.8	Sagittarius

Big Bang and Big Crunch

By Mr. U N Deka -Member and Treasurer -AAA (Bombay)

The concept of time has no meaning before the beginning of the Universe. There was a time called the big bang when the universe was infinitesimally and infinitely dense. The time had the beginning at the Big -Bang.

The putative primordial state of, the universe was a singularity in which everything in the universe was concentrated. The expansion of the universe began when the 'cosmic egg' exploded presumably with the biggest bang possible.

The event that took place at the beginning is commonly referred to as 'Big-Bang' and is visualised as the explosion of an enormously compacted egg of matter. In that titanic explosion, the universe began an expansion which has never ceased. As the universe is expanding, there is physical reason why there had to be a beginning. Ten to twenty billion years ago something happened - the Big - Bang, the event that began the universe.

According to the general theory of relativity, there must have been a state of infinite density in the past. The Big-Bang which would been an effective beginning of time. Similarly, if the universe recollapsed, there must be another state of infinite density in the future, the big-crunch, which will be the end of time.

Einstein's general theory of relativity, on its own, predicted that space-time began at the big-bang singularity and would come to an end at the big-crunch singularity (if the whole universe recollapsed) or at the singularity inside a black-hole (if a local region, such as a star , were to collpase.). In other words, even if the whole universe did not recollpase, there would be singularity in any localised region that collapsed to form a black-hole. These singularities would be end of time for any one who fell in the black hole. Any matter that fell into the black hole would be destroyed at the singularity and only the gravitational effect of its mass would continue to be felt outside. Black hole is the natural consequence of the death of a extremely massive star. It is a region in space-time from which nothing, not even light, can escape, because gravity is too strong.

When the quantum effect of matter and energy were taken into account, it seemed that the mass or energy of the matter would eventually be returned to the rest of the universe and the black hole along with the singularity inside it, would evaporate away and finally disappear.

As the big-bang and other singularities all the laws would have broken down. (so God would still have had complete freedom to choose what happened and how the universe began.

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The revised annual membership fees is as under:

Ordinary Membership Rs. 100/-
Student Membership Rs. 50/-
Outstation Membership Rs.60/-
Institution Membership Rs.501/-
(Admission fees Ts.10/-)
One time Membership fees:
Patron Membership Rs. 2000/-
Life Membership Rs.1000/-

Mr. Aadil Desai participated during the Scottish Astronomy Weekend in Sept. 97 at Dundee, Scotland and represented the Association. A talk giving report of his visit has been planned for Oct. 25, 1997.

On the night of Oct 15 and early morning of Oct 16, we will get an opportunity to see lunar occultation of Saturn. It will be an interesting phenomenon to observe and record.

Occultation by the Moon

Occultation occur when a solar-system body passes between us and another or a star. In the case of the moon, a planet or star is seen to vanish at one limb of the moon and reappear at the other (one or the other limb being bright). Besides being interesting to watch, these events if exactly timed yield scientific information about the shape of the Moon, size and shape of an occulted asteroid, the existence of a companion or an atmosphere for the occulted asteroid or the star.

Lunar occultation of the planet is a very rare event. In the occulted body is covered by just the outer edge of the Moon's disk, the occultation is called grazing occultation. During the grazing occultation, the occulted body will vanish behind the lunar mountains and reappear from behind the lunar valleys as the moon moves by.

On 15th Oct. 1997 interesting occultation of bright planet Saturn is going to take place.

On this day the Saturn will vanish behind the moon and will reappear from the other limb after 3-4 hours. It will be a n interesting exercise to

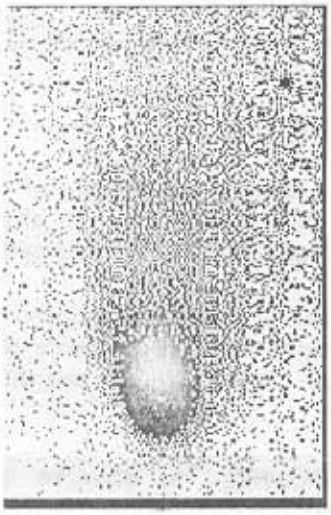
We see the Universe the way it is because we exist. Why the universe is the way we see? The answer is then simple. If it had been different, we would not be here.

Occultation of the moon (contd.)

22.49 IST. This is the time of the middle of the occultation. Saturn shines at magnitude of 0.2 and maximum separation will be 0.038 degrees.

Since it will be 14th day of the lunar month, the moon will be very bright and the Saturn's ring vanishing behind the Moon will be delightful sight for any observer.

The members are requested to observe and study this phenomenon and measure the exact timing of first contact i.e ingress and last contact i.e egress and send their finding to the Secretary.



Comet Hale-Bopp : Photograph By Mr. Aadil Desai

Renewal of Membership

Members are requested to renew their membership for the year 1997-98. Please contact Mr. Dilip Vyas or Ms. U N Deka or Mehul Shah during any Library Day.

Library Books

All those who have borrowed Library Books and not returned them as yet, are requested to return them during the next Library days. Library Members are also requested to renew Library Fees and pay annual reading charges.

Regular Association Timings		Telephone Numbers		Membership fees	
2nd Saturday	3. 30 p.m.- 5.30 p.m..			Student	Rs.60/-*
Library Timings:		Mr. Aadil Desai	430 6519	Ordinary	Rs.100/-*
2nd Saturday	3. 30 p.m.- 5.30 p.m..	Mr. Bharat Adur	385 7293	Life Membership	Rs.1000/-
4th Saturday	3. 30 p.m.- 5.30 p.m..		492 0574(O)	Outstation Membership	Rs.60/-*
		Mr. Dilip Vyas	373 8322		
			838 9270(0)	* Admission Fees Rs.10/- extra.	

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