

Hyderabad

Report

on the UNESCO/IAU Summer School for Young Astronomers held in Hyderabad,
India, 1969

The International Astronomical Union organized under the terms of
Contract UNESCO/SC/1492/69 an International School for Young Astronomers at the
Osmania University, Centre of Advanced Studies in Astronomy, Hyderabad, India,
from 6 October to 29 November 1969. The programme of the school was as follows:

Lecturer	Subject	Lectures, 60 minutes each
Prof. I. Napai England	Binary Stars	20
	Physics of the Moon and Planets	10
Dr. J. Kleczek Czechoslovakia	Modern Astrophysics	20
Dr. A.B. Meinel U.S.A.	Astronomical Optics	20
Dr. J. Meaburn England	Instrumental Techniques	20
Dr. S.N. Sivarana U.S.A.	Aurora and Airglow; Variable Stars	20
Prof. R.V. Iyandiker		
Dr. H.B. Sanwal both India	Astronomical Spectroscopy	10
Dr. N. Golay Switzerland	Stellar Photometry	20
Dr. H.B. Sarma		
Dr. H.B. Sanwal both India	Stellar Photometry	10
Dr. H.K.V. Sappu India	Spectroscopy and Stellar Atmospheres	20
Dr. S.R. Alladin India	Stellar Dynamics	10
Dr. H.S. Vardya India	Late-type Stars	10
Dr. H.A. Doughty New Zealand	Atomic Collision Processes, Role of Negative Hydrogen Ion in Stellar Atmospheres	5

The school was attended by the following 25 students from different
developing countries:

1. **Dr. F.A. Doughty**
Lecturer in Physics
Department of Physics
University of Canterbury
Christ Church 1
New Zealand
2. **Dr. K. Higajim**
Department of Astronomy
College of Science
University of Kyoto
Kyoto 606
Japan
3. **Mr. Cheng Shao - Chang**
206, Kung Yuan Street
Keelung
Taiwan
China
4. **Miss S. De Silva**
Student
16, Right Circular Road
Jayanthipura
Battaramulla
Ceylon
5. **Miss V. Nagenthiran**
Student
37/1, Pedris Road
Colombo 3
Ceylon
6. **Mr. V.P. Gaur**
Scientific Officer
U.P. State Observatory
Munera Peak
Naini Tal
Uttar Pradesh
India
7. **Mr. J.P. Chaturvedi**
Scientific Officer
U.P. State Observatory
Munera Peak
Naini Tal
Uttar Pradesh
India
8. **Mr. R.S. Mehra**
Astronomer
U.P. State Observatory
Munera Peak
Naini Tal
Uttar Pradesh
India
9. **Mr. K.R. Bondal**
Assistant Astronomer
U.P. State Observatory
Munera Peak
Naini Tal
Uttar Pradesh
India
10. **Mr. J.B. Sriwantava**
Scientific Officer
U.P. State Observatory
Munera Peak
Naini Tal
Uttar Pradesh
India
11. **Mr. R. Raja Mohan**
Research Scholar
Astrophysical Observatory
Kodaikanal 3
Tamilnadu State
India
12. **Mr. A.T. Doss**
Assistant Meteorologist
Astrophysical Observatory
Kodaikanal 3
Tamilnadu State
India
13. **Mr. T. Balakrishnan**
Assistant Meteorologist
Astrophysical Observatory
Kodaikanal 3
Tamilnadu State
India
14. **Mr. V. Natarajan**
Assistant Meteorologist
Astrophysical Observatory
Kodaikanal 3
Tamilnadu State
India
15. **Mr. R. Swaminathan**
Junior Research Associate
Nizamiah Observatory
Begumpet
Hyderabad - 16
Andhra Pradesh
India

16. Mr. Naushir Janshedji
Astronomical Computer
Bizenish Observatory
Begumpet
Hyderabad - 16
India

17. Mr. S. Sureshar Rao
Project Scholar
Bizenish Observatory
Begumpet
Hyderabad - 16
Andhra Pradesh
India

18. Mr. P.V. Subrahmanyam
Lecturer
Department of Astronomy
Osmania University
Hyderabad - 7
India

19. Mr. K.D. Chary
Research Fellow
Department of Astronomy
Osmania University
Hyderabad - 7
India

20. Mr. A. Potlur
Research Fellow
Department of Astronomy
Osmania University
Hyderabad - 7
India

21. Mr. S. Venkateswara Rao
Research Scholar
Department of Astronomy
Osmania University
Hyderabad - 7
India

22. Mr. G.M. Sallabh
Research Scholar
Department of Astronomy
Osmania University
Hyderabad - 7
India

23. Mr. H. Partha Sarathy
Research Scholar
Department of Astronomy
Osmania University
Hyderabad - 7
India

It is regrettable that Mr. Jurga Ibrahim from Indonesia could not participate in the lectures partly for budgetary reasons (the expenses were considerably higher than foreseen in the budget), and partly for organizational difficulties (his first application went astray in the mail, the second one arrived with the school well under way).

The lectures were given by:

1. Professor H. Nepal
Professor of Astronomy
Astronomy Department
The University
Manchester 13
United Kingdom

2. Dr. J. Heaburn
Lecturer
Astronomy Department
The University
Manchester 13
United Kingdom

3. J. Kleczek
Gndrfejov
Czechoslovakia

4. Dr. H.S. Vardya
Associate Professor
Astrophysics Division
Tata Institute of Fundamental
Research

5. Smt. Shabha Nand
Colaba
Bombay 5
Maharashtra State
India

6. Professor E.V. Karandikar
Director
Bizenish Observatory
Begumpet
Hyderabad - 16
Andhra Pradesh
India

4. Dr. A.R. Meinel
Director

Optical Sciences Centre
University of Arizona
Tucson
Arizona 85721
U.S.A.

5. Dr. S.N. Silverman
CRAA, Chief

Aurora and Airglow Branch
Aeronomy Laboratory
Air Force Cambridge Research
Laboratories
L.G. Hanscom Field
Bedford
Massachusetts 01730
U.S.A.

6. Professor H. Galey

Observatoire de Genève
Champery 1290
Genève
Switzerland

7. Dr. M.K.V. Kapra
Director

Astrophysical Observatory
Kodaikanal 3
Tamilnadu State
India

10. Dr. H.B.K. Sarma
Reader-Associate Astronomer

Department of Astronomy
Osmania University
Hyderabad - 7
Andhra Pradesh
India

11. Dr. S.K. Alladin
Reader-Associate Astronomer

Department of Astronomy
Osmania University
Hyderabad - 7
Andhra Pradesh
India

12. Dr. N.B. Sanwal
Associate Astronomer

Hissarish Observatory
Begumpet
Hyderabad - 16
Andhra Pradesh
India

13. Dr. H.A. Doughty
Lecturer in Physics

Department of Physics
University of Canterbury
Christ Church 1
New Zealand

Finances

The school was financed from three sources:

- a) the Contract UNESCO/80/1492/69 \$ 8000 US
- b) the budget of the New Delhi University
Grant Commission more than \$ 14000 US
- c) the IAU budget \$ 729.40 US

The sums spent under the terms of the UNESCO Contract and from the IAU budget were as follows:

1. Travel expenses of lecturers:	\$
Kapra	945.-
Krauss	945.-
Meinel	1437.-
Silverman	1177.-
Galey	807.-
Krauss	<u>618.40</u>
	6129.40

2. Travel expenses of students		₹
Misa de Silva (Colombo)		50.00
Misa Nagathirum (Colombo)		50.00
Dr. Doughty (New Zealand)		<u>1050.-</u>
	Total	1151.60
3. Honoraria to lecturers		
Epel		450.-
Hosburn		300.-
Klaczek		300.-
Galay		150.-
Doughty		<u>50.-</u>
	Total	1250.-
4. Secretarial expenses		
Trip to Switzerland		195.40
Recapitulation		
Travel expenses of lecturers		6139.48
Travel expenses of students		1151.60
Honoraria to lecturers		1250.-
Secretarial expenses		<u>195.40</u>
	Grand total	8729.48

The amount of ₹ 195.40 covering Klaczek's trip to Switzerland was charged against item "Commission Expenses", and that of ₹ 531.08, partly to cover Dr. Doughty's travel expenses, against item "Special Projects" (Commission 38) of the IAU budget.

The sum of more than ₹ 14000 (more than 100 000 rupees) allocated by the University Grant Commission (New Delhi) was used to cover the travel and living expenses of both lecturers and students in India, the honoraria of Indian lecturers, pocket money, and minor organisational expenses.

Evaluation

In organising the Summer School, IAU Commission No. 46 on Teaching of Astronomy introduced a new policy of bringing the teachers to the students rather than have the students travel to the lecturers. This method proved advantageous in that

1. it permitted a larger attendance of registered students than at the previous Summer Schools.

2. it permitted a large number of not registered local participants to follow the lectures,
3. the lectures could be adapted to local conditions, especially to the instruments locally available,
4. the host Institute benefitted from the advice of lecturers especially as regards development and design of new instruments, research programmes, etc.

Each registered student was examined by his lecturers both orally and in writing by answering a mimeographed questionnaire. The classification was: excellent, very good, good, adequate, inadequate.

Ten per cent of the students were excellent, 25% very good, 40% good, 20% adequate and 5% inadequate. This result shows clearly that the school fulfilled its purpose.

It is worth noting that the Indian students had a good background in physics, mathematics and astronomy which greatly added to the good standard of the school. The students from Ceylon were well versed in mathematics and physics, but their knowledge of astronomy was poor. This must be accounted for by the non-existence of astronomical facilities in Ceylon. Our Japanese colleague was very good in astronomy, but he has difficulties with his spoken English. Interesting was the case of the student from the Chinese Republic (Taiwan); he is a typical self-made man in astronomy. His enthusiasm and zeal helped him to overcome the astronomical shortcomings of his country, to acquire a high standard of astronomical erudition, and largely to benefit from the school. He should be aided in his further studies. The student from New Zealand (who also held a seminar) had a very good background in theoretical astrophysics, but he was wanting in practical experience.

The extracurricular activity included excursions to the Kodaikanal, Haridwar and Madhavpur Observatories, special seminars, discussions and training on instruments. For the benefit of Indian astronomers a seminar was given on the use of medium size telescopes, such as the telescope of 1 meter in dia., shortly to be installed at three Indian Observatories.

In conclusion I wish to thank UNESCO for the generous grant of \$ 4000 towards the organization of the school, the New Delhi University Grant Commission for subsidizing the stay of the lecturers and students in India, and to Professor Karandikar and his staff for the excellent organization of the project.

J. Kleeck

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Secretary

International School for
Young Astronomers

Praha 4 December 1969