

XVIIIth GENERAL ASSEMBLY

ASTROCOSMOS



August 20
Number 4



Patras: Greece 1982

Le 20 Août
Numéro 4

Editorial Office: T-block

Editor: ARCHIE E. ROY

Telephone: 991 465

The Executive Committee of the International Astronomical Union announces with profound sorrow that the death of the President of the Union, Professor M.K. Vainu Bappu, took place at 6 p.m., Patras time, on Thursday, 19th August, in Munich, Germany. Formal tribute will be paid during the period of the General Assembly at a time and place to be announced.

Editorial

As our readers will have seen, news has reached us of the tragic death of the President of the I.A.U., Professor Bappu. The Local Organizing Committee and the staff of ASTROCOSMOS express their deep sorrow at the loss of this fine and distinguished man.

TODAY'S EVENTS: LES EVENEMENTS DU JOUR: JOINT DISCUSSION IV:

«Exploration of the Solar System»
(IAU Commissions 16, 44)

09.30-11.00, 11.30-13.00, 15.30-18.00, Room AB, 20th August

SOC	Commission
G E Hunt (UK) Chairman	16
B A Smith (USA)	16
T C Owen (USA)	16
J E Blamont (France)	16
A Brahic (France)	16
J E Guest (UK)	16
D M Hunten (USA)	16
M Y Marov (USSR)	44
H Masursky (USA)	16
G H Pettengill (USA)	
G L Tyler (USA)	
R von Eshelman (USA)	

Programme

Session I — Voyager 2 Encounter with Saturn.

F Scarf: «Magnetosphere of Saturn».

D Morrison: «Satellites of Saturn».

J Cuzzi: «Rings of Saturn».

T Owen: «Titan».

D Gautier: «Structure and Composition of the Atmosphere of Saturn».

R Beebe: «Meteorology of Saturn».

Session II — Chairman B.A. Smith — Pioneer Venus and Venera Studies of Venus Pioneer Venus and Venera Missions.

H Masursky: «Surface of Venus».

R Prinn: «Chemistry and Clouds of Venus».

T Donahue: «Atmospheric Composition and Evolution of Venus Atmosphere».

Results from Recent Pioneer Venus and Venera Missions

L Brace: «Interaction of Venus and Solar Wind».

V L Basukov: «Studies of the Surface of Venus from Venera Probes».

M Marov: «The Venus Nature: A Discussion on New Findings».

In Building A, IAU Secretariat:

17.30-18.30: Meeting of Finance Subcommittee

INVITED DISCOURSE

In the Ancient Odeon of Patras:

20.30 «Early Stages of Stellar Evolution» by G H Herbig

At EOT Swimming Resort, Aya, Patras:

WINE FESTIVAL 20.00-24.00

Publisher: For the Local Organizing Committee, V V Markellos
Editor: A E Roy
Both at the University of Patras

Phototypesetting and Printing: P. Constantinoupolos, 115 Maizonos Str - Patras

CHANGES IN THE FINAL PROGRAMME COMMISSION MEETINGS

The following changes have been made in the Final Programme of Commission Meetings, as distributed to participants, between 1 August and 15 August. Further alterations will be posted on Announcement Boards and given in the daily programme sheets.

Commission 4
Add 044 Scientific 21 August, Session 1, 2 B1
045 Scientific 23 August, Session 1, 2 B4

Commission 7
070 located in B2, not B3
071 located in B2, not B3
243 Occupying Sessions 1 and 2

Commission 8
082 Room B3, 25 August Sessions 1 and 2
243 Occupying Sessions 1 and 2

Commission 9
090 Room T15 18 August Sessions 3 and 4
093 Occupying Sessions 1, 2 and 3 (Room T15),
094 - Occupying Session 4 only
095 Occupying Sessions 1, 2, 3 and 4

Commission 24
243 Occupying Sessions 1 and 2

Commission 28
Delete 2nd entry meeting No 332

Commission 33
243 Occupying Sessions 1 and 2

Commission 34
150 Room AA, 20th August, Session 4

Commission 40
243 Occupying Sessions 1 and 2

Commission 44
441 Room T13
243 Occupying Sessions 1 and 2

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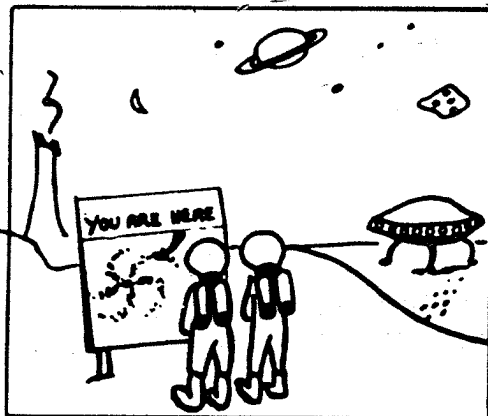
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ASTRONOMY COMING TO GRIPS WITH ITS IDENTITY CRISIS

The IAU and in particular, Commission 5, the commission concerned with documentation, have been grappling with the problem of astronomical nomenclature. Over the last decade the identity crisis reached chaotic proportions due to the rapid rate of discovery



of new types of astronomical objects. To bring a little order out of chaos, the following recommendations were presented at the previous General Assembly of the IAU held in Montreal in 1979. 1. Authors should use at least two designations for principal objects in their studies. One of these should be a designation containing at least a rough positional information, as for example, does the HD catalog (which is ordered by 1900 right ascension); alternatively, the coordinates of the object may be given. 2. All the standard catalog abbreviations should be collected and published by the IAU. A

preliminary draft of such a compilation Fernandez, Lortet and Spite is now ready for review at this General Assembly and will be submitted for publication by the end of the year (most likely as a separate supplement to the journal, *Astronomy and Astrophysics*). 3. A guide to the «current designational practices» of particular types of objects should be assembled to serve as a standard reference work. Dr. Jaylee Mead of the NASA stellar data center has been collecting this information and a progress report is available. 4. The following designation hierarchy was recommended for stellar objects: the star name (e.g. Sirius, Vega) for the few brightest stars, the Bayer letter, Flamsteed number, HD, BSC, HD'BD or CoD or CPD, and finally some catalog designation with accurate position and possibly a finding chart. 5. For nonstellar objects, the NGC or IC number should be given, then a designation on the Parallax system using right ascension and declination (1959) or for objects of pronounced Galactic distribution within our own galaxy, using galactic longitude and latitude.

The above recommendations do not address the subject of sub-condensations of different kinds of objects within a given large source, a common occurrence in the interstellar medium. Some of the commissions are tackling this problem. To highlight the confusion, progress, and need for care in making astronomical designations, ASTROCOSMOS will publish a few nomenclature traps and poetry in future editions.

BULLETINS

Commission 37 — Star clusters and associations

General meeting

Our general meeting will be held on Monday, August 23rd at 9.30 in room DB. There will be an administrative agenda followed by scientific sessions on open clusters and globular clusters.

The business will include membership questions and plans for future meetings in which our commission will take part. We shall also discuss a proposal about the principles for numbering members of clusters. If you want anything else to be brought up, please put a note in my letter box.

Chairmen for the scientific sessions are P.E. Nissen for open clusters and J. Mould for globulars. These sessions will be poster sessions to which the chairmen will give an

introduction. After inspection of the posters, i.e. 12.00, there will be open discussions of the papers. Suitable time for mailing your poster will be on Friday afternoon between 15.00 and 18.00 or Monday morning between 8 and 9.30.

Cluster cores

A session about cluster cores will be held on Wednesday, August 25th at 11.00, in room A1. Chairman will be D. Heggie.

Gösta Lyngé

Working Group on International Motions of GALAXIES, Commission # 2F:

Owing to time-table conflicts, the meeting of the working group has been rescheduled to 24 Aug. The meeting will be merged with that of the WG on Photometry of Galaxies — 24 Aug., Sessions 3 and 4, Room B1.

Participants who wish to make contributions should have a note either on the commission notice board or in my box in the USA section S.T. Gottesman, Chairman WG

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LES VITESSES RADIALES AUX PRISMES-OBJECTIFS DE FEHRENBACH ET LE PROJET HIPPARCOS

M. Duflot, Observatoire de Marseille
Place Le Verrier, 13248 Marseille,
Cedex 4. France

Le satellite européen HIPPARCOS devrait fournir les positions d'environ 100.000 étoiles avec une précision encore jamais atteinte (0",002). Pour un certain nombre de ces étoiles, les plus proches et les plus rapides, nous connaissons les parallaxes et les mouvements propres avec également cette grande précision. Il est évident que si la vitesse radiale de ces mêmes étoiles était connue, les études cinématiques et dynamiques de la galaxie seraient nettement améliorées.

Pour les étoiles froides, de types plus avancés que F1 I ou F5 V, la méthode photoélectrique par corrélation de Griffin donnent des résultats de vitesse radiale de grande précision. Le CORAVEL, issu d'une collaboration Genève-Marseille (MAYOR, BARANNE) utilise cette méthode.

Un groupe franco-suisse a été créé pour assurer la mesure des étoiles du programme HIPPARCOS. Le CORAVEL installé sur le télescope suisse de 1 m situé à l'Observatoire de Haute Provence mesurera les étoiles de l'hémisphère Nord. Le deuxième CORAVEL existant sera utilisé dans l'hémisphère Sud.

Pour les étoiles chaudes, Ch. FEHRENBACH, M. DUFLOT et l'équipe des prismes-objectifs (PO) ont déjà commencé à choisir des champs stellaires où se groupent des étoiles de magnitude inférieure à 9, dont la vitesse radiale est inconnue. Dans ces champs, chaque cliché de 4° x 4° permettra la mesure de la vitesse radiale de 40 étoiles en moyenne, de tous types spectraux jusqu'à la magnitude 10.

Les étoiles froides mesurées par CORAVEL permettront l'étalonnage des mesures PO et, réciproquement, des mesures complémentaires seront apportées aux mesures CORAVEL permettant de confirmer stabilité ou variabilité des vitesses radiales, même si les mesures PO n'ont pas la très haute précision des mesures CORAVEL.

Toutefois la précision des mesures PO, sur les clichés obtenus au grand prisme-objectif

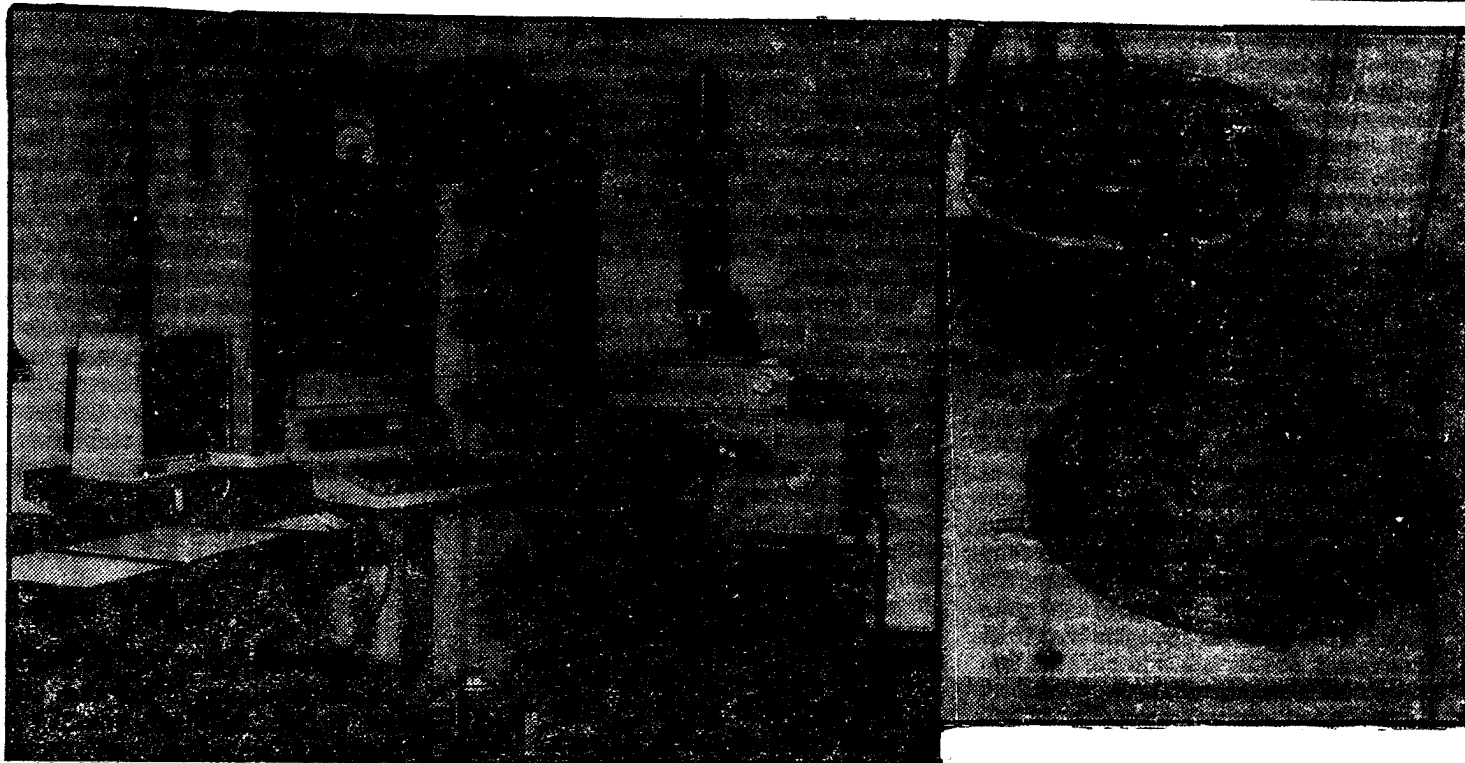


Fig. 1. Les deux verres du prisme-objectif de 60 cm dans leur barillet. Associé au télescope franco-belge de l'Observatoire de Haute Provence, ce prisme permet d'obtenir des clichés pour la mesure de la vitesse radiale de toutes les étoiles d'un champ de 4° x 4°, jusqu'à la magnitude 12 (méthode FEHRENBACH). Observatoire de Haute-Provence du Centre National de la Recherche Scientifique.

Fig. 2. Ensemble des appareils constituant le MESUCOR, qui permet la mesure des vitesses radiales des clichés de prismes-objectifs. Observatoire de Haute Provence du Centre National de la Recherche Scientifique.

de 60 cm associé au télescope de Schmidt franco-belge de l'observatoire de Haute Provence est surprenante, 4 km s⁻¹, pour une moyenne de 3 clichés et quel que soit le type spectral. Cette précision s'explique par:

- a) L'absence de toute correction de champ et de toute erreur due à des défauts de guidage, etc... Seule la turbulence atmosphérique limite la précision sans introduire d'erreur systématique.
- b) L'excellence des spectres, grâce à la

qualité de l'optique (prisme, lame de Schmidt, etc...).

- c) L'excellent contraste des plaques IIIaJ.
- d) La mise au point par Ch. FEHRENBACH et R. BURNAGE de la méthode de dépouillement qui permet de tenir compte de très faibles variations de dispersions, en fonction de la position de l'étoile sur le cliché et qui permet de ramener la dispersion d'un cliché donné aux spectres étalons de l'ordinateur.

- e) La méthode absolument impersonnelle des mesures et calculs.

L'équipe des PO de Fehrenbach s'engage donc, pour servir le programme HIPPARCOS, dans la mesure des vitesses radiales du plus grand nombre possible d'étoiles brillantes (< 10). Une partie de son activité reste cependant liée à des problèmes spécifiques nécessitant l'obtention de vitesses radiales d'étoiles faibles jusqu'à la magnitude 12 au moins.

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The Newsletter of Commission 46 Education in Astronomy

Commission 46 encompasses a great range of interests in astronomy education, such as teacher training in countries where astronomy appears in the school curriculum, needs for astronomy in developing countries, the role of astronomy in interdisciplinary university courses, etc. In order to exchange ideas, the Commission started a Newsletter six years ago. Twelve issues have appeared. Recent issues contained:

i) The National Reports from 33 countries, describing the highly diverse ways used in these countries to further astronomy education.

ii) The Astronomy Education Materials, divided into three parts: Materials in English, Slavic languages, and all other languages. These list not only recently published books but also atlases, journals, lecture notes, films, sources for visual aids, astronomy organisations, etc. The materials are classified according to the appropriate audience, from popular to university astronomy students.

iii) A collection of articles on Women in Astronomy. (It is hoped to reprint these articles in a future issue of ASTROCOSMOS).

iv) Articles dealing with specific problems of classroom teaching, with microcomputers,

with the role of astronomy in interdisciplinary courses, etc.

v) Announcements of Commission activities: International Schools for Young Astronomers, availability of movies and slides, education-oriented sessions at IAU regional conferences, the Working Group on Educating Astronomers from Developing Countries, and this Newsletter.

Most of the recent issues have been supported financially by the IAU. The Astronomy Education Materials were supported by a grant by ICSU to the IAU. Therefore, the Newsletter is available at no cost to subscribers. The only requirement is sufficient interest to read it. Most subscribers are individuals. (Membership in the Commission or even in the IAU is not required.) Subscriptions by libraries are welcome.

If you wish to receive the Newsletter, or if you wish a colleague or library to receive it, please put the name and address in Donat G. Wentzel's mailbox or send by mail to Astronomy Program, University of Maryland, College Park MD 20742, USA. Back numbers will be distributed as long as they are available.

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Naked-eye comet puts in appearance at I.A.U.

A masterpiece of good timing—or perhaps an intercession on the part of the Greek gods?—has brought a naked-eye comet to grace the skies of the IAU delegates in Patras. Discovered by Rodney Austin in New Zealand on 18 June, the comet, officially designated 1982g, is currently plunging towards its closest approach to the Sun on 24 August.

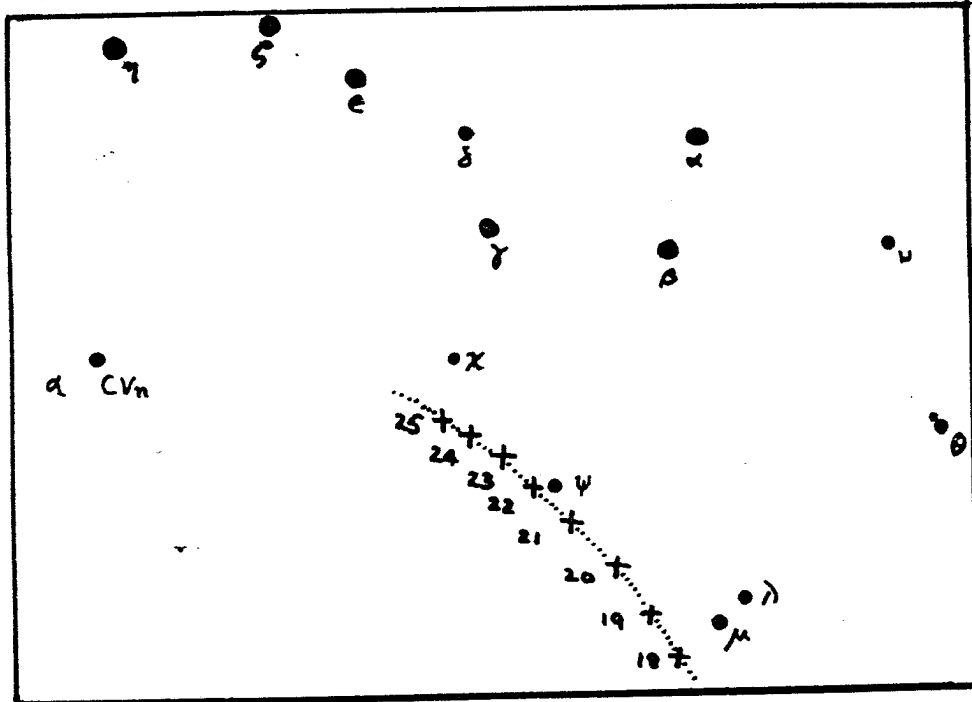
Like all comets, Comet Austin is a loose ball of frozen gas and dust which normally lives at the very edge of our Solar System. It's estimated that many millions of comets make their homes out there in a huge cloud surrounding the Sun—probably a relic of the Solar System's formation—until the odd gravitational tug sends one hurtling in towards the Sun. The unfortunate comet doesn't normally fall straight into the Sun, but suffers an uncomfortable ride as its frozen outer layers first melt, then evaporate, and finally stream out in a spectacular tail at the comet's closest approach. After rounding the Sun, the comet finds itself trapped among the planets. It can never escape again back to its home cloud, and its fate is to orbit the Sun forever until it is worn away to dispersed dust.

Despite last century's succession of brilliant comets—many of which were regarded as portents of disaster—the twentieth century has put on a pretty poor show so far. Apart from Halley's Comet in 1910, another very bright one in the same year and a few bright

sparks in the 1950s, there have been only two reasonably bright naked-eye comets in the past decade, Comet Bennett and Comet West. Comet Kohoutek, enthusiastically predicted by the press to become «the brightest comet of the century» spectacularly failed to put on any fireworks. We can't expect fireworks from Comet Austin, either, for although it's emerging from the Sun's glare it is moving away from the Earth and growing steadily fainter.

But if you have an idle moment on one of these heady evenings as you sit under the stars savouring the delights of souvlaki take a close look below the seven stars of the Plough (Big Dipper), the brightest part of Ursa Major. You should just be able to see a dim fuzzy patch (the comet is expected to be between fourth and fifth magnitude), which will move steadily to the left from night to night. With the rather hazy skies we've had recently, a pair of binoculars should speed up the finding process. And if you can't see the thing, complain to Commission 15, or blame the local wine!

The path of comet Austin, as seen in the northwestern sky fairly soon after sunset, on successive days of the IAU. The stars of Ursa Major are labelled by Greek letters (of course!)



MAIN MUSICAL EVENT — CONTEMPORARY GREEK MUSIC

At the Ancient Odeon of Patras, a location becoming increasingly familiar to the participants to the Eighteenth General Assembly, a transformation took place from the world of ancient Greek learning to the dramatic audio—and visual—spectacle of contemporary Greek music. Last night Greek contemporary music demonstrated that it follows a path of its own. It has derived inspiration from the short «tradition» of western contemporary music and from Greek folk song and Byzantine music but has fused them into a distinct pattern of sound, light and action.

Led by a Byzantine chanter, half a dozen diverse instruments blended together elements from Greek music of all periods over the past two and a half thousand years in Dimitri Terzaki's «Nomo». Stefanos Vassiliadis's «En Pyri», on the other hand, conjured up sounds and sights totally strange to the Odeon's builders. To a scintillating display of

intertwined with the electronic sounds on tape.

The visual spectacle continued as Stella Gadeli sang, danced, acted and played a variety of flutes in «Parastasis» by Nicos Mamangakis, again accompanied by complex background of electronic music on tape. And the thespian art played a major role in Jani Christou's last work «Anaparastasis 3: the Pianist», featuring a pianist who is unable to communicate with his piano. Vocal and instrumental ensembles and taped sounds provided a powerful curtain of sound behind this emotional struggle, and the audience felt nothing but sympathy for the actor when he finally turned to them and admitted that he had lost the stylised battle.

Even those delegates who arrived saying that they had little time for contemporary music left the Odeon feeling that they had thoroughly enjoyed this new, unique and

SEVENTH PRINTING OF FAMOUS SKY ATLAS BEGINS

The National Geographic Society — Palomar Observatory Sky Survey

A seventh printing of the Atlas will be started in December 1982. The Sky Atlas consists of 1872 unbound negative photographic copies of the survey plates on medium-weight resin-coated paper of 14 X 17 inch size. Since the Atlas is made available at a price that covers only the cost of production and handling of the prints, it is not possible to state a fixed price in advance. Estimates based on past experience and projected costs for labor and material suggest that the cost will be approximately \$7,600, U.S. FOB Pasadena. The Atlas will be produced in eight sections, over a period of two years, and you will be charged \$950 for each section, plus postage. The final amount of the eighth invoice will be adjusted either upward or downward in order to reflect the actual cost of printing the Atlas.

Orders will be accepted until November 30, 1982. Please send your orders stating shipping and billing addresses to:

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Prospective customers for the Palomar Sky Atlas are advised that a second Palomar Sky Survey will start in late 1984. It will cover the northern sky above declination -30. Each

field will be photographed using IIIa-J and IIIa-F emulsions. It is expected that photographic copies will be made available on glass and paper or film. The second survey will be released in installments, with the first shipment scheduled for mid-1986.

The International Halley Watch

Those registered for the conference have received a copy of the first IHW Newsletter in their mailbox. On Saturday there will be a special session of Commission 15 called «Comet Halley Observing Plans» devoted to the IHW. The Discipline Specialists for Astrometry, Large Scale Phenomena, Near Nucleus Studies, Photometry and Polarimetry, Spectroscopy and Spectrophotometry, Radio Studies, and Infrared Spectroscopy and Radiometry will be present along with Lead Center personnel to answer any questions you may have about the organization and its goals. Following a general introduction and a question and answer session, the meeting will be split into smaller groups around each IHW Discipline Specialist and Lead Center personnel to permit detailed individual technical or philosophical questioning.

The special session on the IHW will begin at 9.30 AM in room AE on Saturday, August 21.

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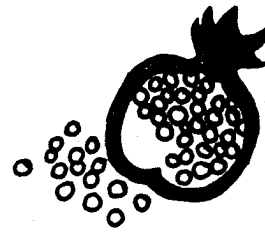
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