



- B. Infrared Astronomy  
 Org.: Dr. Dale Cruikshank Place: Hawaii  
 Dr. Gareth Wynn-Williams  
 Institute for Astronomy Time: 23-28 June 1980  
 University of Hawaii  
 2680 Woodlawn Drive  
 Honolulu, Hawaii 96822, USA
- C. COSPAR - General Meeting  
 Contact for Information:  
 Dr. James Arnold Place: Budapest, Hungary  
 Department of Chemistry  
 University of California Time: 2-14 June 1980  
 at San Diego  
 La Jolla, California 92093, USA
- D. Royal Astronomical Society - Uranus and the Outer Planets  
 Org.: Dr. Garry Hunt  
 Laboratory for Planetary Atmospheres Place: Bath, England  
 Department of Physics and Astronomy Time: 7-9 April 1981  
 University College London  
 Gower Street, London WC 1E 6BT,  
 UK

This is by no means an exhaustive list; members wishing to bring additional meetings to the attention of the general membership should contact the incoming Executive Secretary, Dr. Hunt.

#### 4. New Infrared Telescope Facility

William Brunk of NASA headquarters made a brief announcement of the successful inauguration of the three-meter infrared telescope built under NASA sponsorship on Mauna Kea in Hawaii. Astronomers interested in using this facility should contact Dr. Eric Becklin, Institute for Astronomy, University of Hawaii, 2680 Woodlawn Drive, Honolulu, Hawaii 96822, USA.

#### 5. Saturn Ring Plane Crossings

Dr. M.S. Bobrov has called attention to the rare opportunities for unusual observations of Saturn and its system of rings and satellites that will be afforded by the three passages of the Earth through the plane of the rings during the next twelve months. These observations include studies of the rings themselves, mutual phenomena (eclipses and occultations) exhibited by the satellites, and a search for new satellites near the outer edges of the ring. The dates and times of ring plane crossings furnished by Dr. Bobrov are as follows:

1 st Crossing: 27 October 1979, 3.6 hours UT	2nd Crossing: 12 March 1980, 16.5 hours UT
Sun in Ring Plane: 3 March 1980, 3.5 hours UT	3rd Crossing: 23 July 1980, 4.2 hours UT

## 6. Other Commission Business

There was a brief discussion of the future structure and function of the newly merged Commission. The members present expressed support for a continuation of the triennial report on progress in Solar System studies. They endorsed the proposal by Dr. Anders that this be prepared as a balanced review of the highlights of the entire field rather than a collection of reports of activities from different observatories, institutes, or countries. There was also approval for the establishment and continuation of only those Working Groups that have a specific and well-defined task.

Members with ideas about any of these matters are invited to write to the new officers with their suggestions.

## 7. Resolution for the Merger of Commissions 16 and 17

Whereas the Moon is no longer the only celestial body whose surface can be studied at high resolution, the only body explored by spacecraft, or even the only well-studied satellite, a separate Commission devoted to the Moon is no longer needed.

Be it therefore resolved, that Commission 17: The Moon, be merged with Commission 16: Physical Study of Planets and Satellites, to form a new Commission that shall retain the title and number of the existing Commission 16. The membership of the new Commission shall consist of those members of the existing Commissions 16 and 17 who have expressed their intent to join as well as other members of the IAU who have been invited to join on the basis of their research interests. This Merger will permit studies of the Moon to be continued for mutual benefit, in closer association with studies of other planetary bodies.

Note: This Resolution was passed by the General Assembly; Commissions 16 and 17 are now combined as Commission 16.

15 August 1979

### I. JOINT SESSION WITH COMMISSIONS 40 AND 44:

#### STRATEGIES FOR THE SEARCH FOR LIFE IN THE UNIVERSE

Organizing Committee: F. Drake, T. Owen, M. Papagiannis (Chmn.), B. Zuckerman (USA); N. Kardashev, I. Shklovsky, V. Troitsky (USSR); J. Ribes (FRANCE); B. Lovell, M. Rees (UK); G. Marx (Hungary); J. Jugaku (Japan).

INTRODUCTION: An opportune occasion for this meeting (M. Papagiannis)

### I. ALTERNATIVE VIEWS ON THE VALUE OF N

Co-Chairmen: I. Shklovsky and P. Morrison

1. N is very small (M. Hart)
2. N is very large (T. Kuiper)
3. N is neither very small nor very large (F. Drake)
4. N is either very small or very large (M. Papagiannis)
5. Comments and Discussion
6. Summary (P. Morrison)

## II. STRATEGIES FOR SETI THROUGH RADIO WAVES

Co-Chairmen: B. Oliver and J. Jugaku

1. Progress in USA and Canada (B. Zuckerman)
2. Programs in the USSR (V. Troitsky)
3. Large and Small Alternatives for the Future (S. Gulkis)
4. Comments and Discussion

## III. SEARCH FOR EARLY FORMS OF LIFE IN OUR AND OTHER PLANETARY SYSTEMS

Chairman: J. Greenstein

1. The search in our solar system (G. Soffen)
2. Future spectroscopic possibilities for other systems (T. Owen)
3. Search for planets in other solar systems through:
  - a. Astrometric methods (G. Gatewood)
  - b. Interferometric methods (D. Currie)
  - c. Spectroscopic methods (W. Heacox)
  - d. The space telescope (W. Baum)
  - e. Summary (D. Black)

## IV. MANIFESTATIONS OF ADVANCED COSMIC CIVILIZATIONS

Chairman: S. von Hoerner

1. Radio leakage and eavesdropping (W. Sullivan)
2. Discussion
3. Summary (S. von Hoerner)

## II. JOINT SESSION WITH COMMISSION 4

ROTATION OF MARS - G. de Vaucouleurs

REPORT AND RECOMMENDATIONS OF THE JOINT WORKING GROUP ON  
CARTOGRAPHIC COORDINATES AND ROTATIONAL ELEMENTS OF PLANETS  
AND SATELLITES - M.E. Davies16 August 1979

## I. SCIENTIFIC SESSIONS

## A) SATELLITES, RINGS, AND OTHER TOPICS

Chairman; D. Morrison, University of Hawaii

D. Morrison/U. Hawaii	Introduction and Overview of Recent Work
H. Masursky/USGS	Geology of Io
T. Johnson/JPL	Io Volcanoes and Volatiles
C. Pilcher/U. Hawaii	Images of Jupiter's Sulfur Ring
J. Caldwell/SUNY	Atmosphere of Titan
B. Zellner/U. Arizona	Diliter Photometry of Faint Outer Satellites
D. Cruikshank/U. Hawaii	Compositions of the Satellites of Saturn, Uranus, and Neptune.
T. Owen/SUNY	Rings of Jupiter
E. Becklin/U. Hawaii	Detection of the Rings of Jupiter at 2.2 $\mu\text{m}$
W. Irvine/U. Mass.	Azimuthal Brightness Variations in Saturn's Rings
E. Epstein/Aerospace	Saturn's Rings; 3 mm Observations
W. Brunk/NASA	NASA Infrared Telescope Facility
W. Sjogren/JPL	Venus Gravity Field

## B) PLANETARY ATMOSPHERES

Chairman: G. E. Hunt, UK

1. Structure of the Clouds and Upper Atmosphere of Venus from the Pioneer Venus Orbital Infrared Radiometer (VORTEX) R. Beer (USA)
2. The 120-300  $\text{cm}^{-1}$  Spectrum of Venus in March 1979 G. Orton (USA)
3. Chemistry of the Venus Atmosphere R. Prinn (USA)
4. The Nightside Ionosphere of Venus by the Pioneer Venus Radio Occultation A.J. Kliore and J.R. Patel (USA)
5. Martian Weather Systems Observed by Viking G.E. Hunt (UK)
6. UV Observations of Planetary Atmospheres with IUE J. Caldwell (USA)

## Break

7. Spatial Distribution of Methane to Ammonia Ratio in the Jovian Atmosphere B. Lutz and T. Owen (USA)
8. 21cm Observations of Jupiter I. de Pater (NK)
9. Spectrophotometry of Jupiter and Saturn J.T. Bergstralh (USA)
10. An Observed Relationship Between Planetary Albedos and Solar Activity G.W. Lockwood (USA)
11. The Uranus Atmosphere: Increases in its Microwave Brightness Temperature M.J. Klein (USA)

## II. EVENING SUMMARY SESSION ON STRATEGIES FOR SETI

Chairman: L. Goldberg

1. Review of morning sessions (F. Drake)
2. Review of afternoon sessions (M. Papagiannis)

17 August 1979

## I. JOINT DISCUSSION WITH COMMISSIONS 17 and 44: EXPLORATION OF THE SOLAR SYSTEM

Organizing Committee: E. Anders, M. Marov, T. Owen

## A. SMALL BODIES

Chairman: E. Anders

1. Isotopic Anomalies in Meteorites as Clues to the Early History of the Solar System -R. Clayton
2. Identification of Asteroid Classes and their Possible Relationships to Meteorites -D. Morrison
3. Chronologies for Planetary Surfaces from Bombardment Histories -G. Neukum

## B. VENUS - THE SURFACE AND THE ATMOSPHERE

Chairman: B.A. Smith

4. Radar Studies of Venus:
  - A) Ground-Based Observations -D. Campbell
  - B) Pioneer Venus Observations -G. Pettengill
5. Crustal Evolution of Venus Compared with the Other Terrestrial Planets -H. Masursky
6. The Atmosphere of Venus - Pioneer Venus Results -D. Hunten

## C. JUPITER - VOYAGER RESULTS

Chairman: T. Owen

7. The Meteorology of Jupiter -G. Hunt

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| 8. The Satellites of Jupiter                 | -T. Johnson  |
| 9. Vulcanism and the Crustal Structure of Io | -B.A. Smith  |
| 10. Electric Current Induced Vulcanism on Io | -T. Gold     |
| 11. The Magnetosphere of Jupiter             | -N. Ness     |
| 12. A Film of Jupiter at 21 cm               | -I. de Pater |

18 August 1979

SCIENTIFIC SESSION: THE MOON

Chairman: J.D. Mulholland

1. Dynamical evolution of the early Earth-moon system  
-H. Alfven and J. Hill
2. Present-day dynamics of the Earth-moon system  
-R.W. King
3. Free librations and the lunar dissipation parameter Q  
-O. Calame
4. Lunar secular acceleration and the variation of gravitation  
-L.V. Morrison
5. A catalogue of lunar transient phenomena  
-W.S. Cameron
6. Lunar crater distribution and surface unit ages  
-E. Whitaker
7. Lunar surface composition from thermal emission spectra  
-T.H. Morgan and A. Potter