

INTERNATIONAL
COLLOQUIUM
ON
VENUS



AUGUST 10 - 12, 1992
PASADENA, CALIFORNIA

INTERNATIONAL
COLLOQUIUM
ON
VENUS

Sponsored by

National Aeronautics and Space Administration
Jet Propulsion Laboratory
Lunar and Planetary Institute
Russian Academy of Sciences
International Union of Geological Sciences
International Space Year



AUGUST 10 - 12, 1992

PASADENA, CALIFORNIA

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University of California, Los Angeles

PROGRAM

Monday–Wednesday, August 10–12, 1992

POSTERS

8:00 a.m.– 5:00 p.m. Dabney Lounge

Arkani-Hamed J.

Is Ishtar Terra a Thickened Basaltic Crust?

Bussey D. B. J. Guest J. E.

Erosion Versus Construction. The Origin of Venustian Channels

Chadwick D. J. Schaber G. G. Strom R. G. Duval D. M.

Bright Crater Outflows: Possible Emplacement Mechanisms

Clark J. Alexander D. Andres P. Lewicki S. McAuley M.

Image Processing and Products for the Magellan Mission to Venus

Davies M. E. Colvin T. R. Rogers P. G. Chodas P. W. Sjogren W. L.

The Spin Vector of Venus Determined from Magellan Data

Duncan I. Leith A.

*Visco-elastic Relaxation of Venustian Coronae and Mountain Belts:
Constraints on Global Heat Flow and Tectonism*

Hays J. E. Morgan P.

Western Aphrodite Terra, Tectonics, Geology, and Line-of-Sight Gravity

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*Chemical Differentiation on One-Plate Planets: Predictions and Geologic
Observations for Venus*

Johnson C. L. Sandwell D. T.

Variations in Lithospheric Thickness on Venus

Kargel J. S. Komatsu G.

Igneous and Tectonic Evolution of Venustian and Terrestrial Coronae

Keddie S. T. Head J. W. III

*Large Shield Volcanoes on Venus: The Effect of Neutral Buoyancy Zone
Development on Evolution and Altitude Distribution*

Krause J. L.

*Radiation Pressure: A Possible Cause for the Super-Rotation of the
Venustian Atmosphere*

Lovell A. J. Schloerb F. P. McGill G. E.

Derivation of Surface Properties from Magellan Altimetry Data

Parfitt E. A. Wilson L. Head J. W. III

*The Origins of Radial Fracture Systems and Associated Large Lava
Flows on Venus*

Plaut J. J.

"Problem" Footprints in Magellan Altimetry Data

- Raitala J. Kauhanen K.
Cytherean Crustal Bending at Salme Dorsa
- Schultz P. H.
Atmospheric Effects on Crater Growth on Venus
- Schultz P. H.
Effect of Impact Angle on Central Peak/Peak-Ring Formation and Crater Collapse on Venus
- Scott J. F. Griffith D. G. Gunn J. M. Piereson R. G. Stewart J. M.
Tavormina A. M. Thompson T. W.
Magellan Project Progress Report
- Shalimov I. V.
The Geologic Mapping of Venus Using C-1 Format: Sheets 75N254, 60N263
- Slyuta E. N. Shalimov I. V. Nikishin A. M.
Different Types of Small Volcanoes on Venus
- Smyth P. Anderson C. H. Aubele J. C. Crumpler L. S.
Multi-Resolution Pattern Recognition of Small Volcanoes in Magellan Data
- Smrekar S. E. Solomon S. C.
Constraints on Crustal Rheology and Age of Deformation from Models of Gravitational Spreading in Ishtar Terra, Venus
- Zasova L. V. Moroz V. I. Esposito L. W. Na C. Y.
SO₂ in the Middle Atmosphere of Venus: IR Measurements from Venera-15 and Comparison to UV Data
- Zasova L. V.
Middle Atmosphere of Venus and Its Clouds: Latitude and Solar Time Variations

Monday, August 10, 1992

8:45

Welcome and Opening Remarks

ATMOSPHERE/SOLAR WIND INTERACTION

9:00 a.m. Ramo Auditorium

* *Indicates Speaker*

- Chairs:** D. Crisp
T. M. Donahue
- 9:00-9:25 Kasting J. F.*
Venus: The Case for a Wet Origin and a Runaway Greenhouse
- 9:25-9:40 Zhang Y.* Zindler A.
Outgassing History of Venus and the Absence of Water on Venus
- 9:40-10:05 Donahue T. M.* Hodges R. R. Jr.
Methane Measurement by the Pioneer Venus Large Probe Neutral Mass Spectrometer
- 10:05-10:30 Ingersoll A. P.*
Dynamics of the Venus Atmosphere
- 10:30-10:45 Grinspoon D. H.*
Venusian Hydrology: Steady State Reconsidered
- 10:45-11:00 Jenkins J. M.* Steffes P. G.
Long-Term Variations in Abundance and Distribution of Sulfuric Acid Vapor in the Venus Atmosphere Inferred from Pioneer Venus and Magellan Radio Occultation Studies
- 11:00-11:15 Knibbe W. J. J. Wauben W. M. F. Travis L. D.
Hovenier J. W.*
Pioneer Venus Polarimetry and Haze Optical Thickness
- 11:15-11:30 Fahd A. K. Steffes P. G.*
Understanding the Variation in the Millimeter-Wave Emission of Venus
- 11:30-11:45 Meadows V. S.* Crisp D. Allen D. A.
Ground-based Near-IR Observations of the Surface of Venus
- 11:45-12:00 Young R. E.* Houben H. Walterscheid R. L.
Schubert G.
Finite Amplitude Gravity Waves in the Venus Atmosphere Generated by Surface Topography
- 12:00-1:00 Lunch**

- 1:00–1:15 Newman M.*
Results of a Zonally-truncated Three-Dimensional Model of the Venus Middle Atmosphere
- 1:15–1:30 Crisp D.* Meadows V. S. Allen D. A. Bezdard B.
DeBergh C. Maillard J.-P.
Near-Infrared Oxygen Airglow from the Venus Night Side
- 1:30–1:45 Gurwell M. A.* Muhleman D. O. Shah K. P.
Venus Mesospheric Winds and the Carbon Monoxide Bulge
- 1:45–2:15 Cravens T. E.*
The Thermosphere and Ionosphere of Venus
- 2:15–2:30 Alexander M. J.* Stewart A. I. F. Bougher S. W.
Local-Time Asymmetries in the Venus Thermosphere
- 2:30–3:00 Strangeway R. J.*
Evidence for Lightning on Venus
- 3:00–3:30 Luhmann J. G.*
The Solar Wind Interaction with Venus
- 3:30–3:45 Knudsen W. C.*
Venus Internal Magnetic Field and Its Interaction with the Interplanetary Magnetic Field

Monday, August 10, 1992
IMPACT CRATERING
3:45 p.m. Ramo Auditorium

Chairs:**P. H. Schultz**

- 3:45–4:15 Schaber G. G.* Strom R. G. Moore H. J.
Soderblom L. A. Kirk R. L. Chadwick D. J.
Dawson D. D. Gaddis L. R. Boyce J. M. Russell J.
Impact Craters on Venus: An Overview from Magellan Observations
- 4:15–4:30 Roddy D.* Hatfield D. Hassig P. Rosenblatt M.
Soderblom L. De Jong E.
Computer Simulations of Comet- and Asteroid-like Bodies Passing Through the Venusian Atmosphere—Preliminary Results on Atmospheric and Ground Shock Effects
- 4:30–4:45 Schultz P. H.*
Impact-generated Winds on Venus: Causes and Effects
- 4:45–5:00 Ivanov B. A.* Weitz C. M. Basilevsky A. T.
Largest Impact Craters on Venus

- 5:00--5:15 Alexopoulos J. S.* McKinnon W. B.
*Ringed Impact Craters on Venus: An Analysis from
Magellan Images*
- 5:15--5:30 Wichman R. W.* Schultz P. H.
*Floor-fractured Crater Models for Igneous Crater Modification
on Venus*
- 5:30--5:45 Weitz C. M.* Elachi C. Moore H. J. Basilevsky A. T.
Ivanov B. A. Schaber G. G.
Low-Emissivity Impact Craters on Venus
- 5:45--6:00 Stacy N. J. S.* Campbell D. B. Devries C.
*Microwave Scattering and Emission Properties of Large Impact
Craters on the Surface of Venus*

Monday, August 10, 1992
OPEN TO THE PUBLIC
Presentation Sponsored by the Planetary Society
8:00 p.m. Ramo Auditorium

Basilevsky A. T.
Views of Venus—An Historical Perspective

Tuesday, August 11, 1992
SURFICIAL GEOLOGY
8:00 a.m. Ramo Auditorium

- Chairs:** P. G. Ford
 J. J. Plaut
- 8:00-8:30 Arvidson R. E.*
Surface Processes on Venus
- 8:30-8:45 Dawson D. D.* Strom R. G. Schaber G. G.
*Monte Carlo Computer Simulations of Venus Equilibrium and
 Global Resurfacing Models*
- 8:45-9:00 Bullock M. A.* Grinspoon D. H. Head J. W. III
Monte Carlo Modelling of the Resurfacing of Venus
- 9:00-9:15 Newman W. I.* Jones E. M. Campbell D. B.
 Stacy N. J. S.
*A Model for the Formation of the Extended Paraboloidal Halos
 Around Some Impact Craters on Venus*
- 9:15-9:30 Plaut J. J.* Saunders R. S. Stofan E. R. Kirk R. L.
 Schaber G. G. Soderblom L. A. Ford P. G.
 Pettingill G. H. Campbell D. B. Stacy N. J. S.
 Arvidson R. E. Greeley R.
*Anomalous Scattering Behavior of Selected Impact "Parabola"
 Features: Magellan Cycle-to-Cycle Comparisons*
- 9:30-9:45 Izenberg N. R.*
*Venusian Extended Ejecta Deposits as Time-Stratigraphic
 Markers*
- 9:45-10:15 Saunders R. S.* Stofan E. R. Plaut J. J. Michaels G. A.
*Overview of Venus Geology: Preliminary Description of Terrain
 Units for Venus Global Geologic Mapping*
- 10:15-10:30 Tanaka K. L.* Schaber G. G.
*Can a Time-Stratigraphic Classification System Be Developed
 for Venus?*
- 10:30-10:45 Basilevsky A. T.* Weitz C. M.
The Geology of the Venera/Vega Landing Sites
- 10:45-11:00 Moore H. J. Saunders R. S. Plaut J. J. Parker T. J.
Magellan Stereo-Images and Venusian Geology
- 11:00-11:30 Pettengill G. H.* Wilt R. J. Ford P. G.
Dielectric Surface Properties of Venus
- 11:30-11:45 Tyler G. L.* Simpson R. A. Maurer M. J. Holmann E.
Scattering Properties of Venus' Surface
- 11:45-12:00 Muhleman D. O.* Butler B. J.
Radar Anomalous, High Altitude Features on Venus

- 12:00-12:15 Campbell D. B.*
Polarization Properties and Earth-based Radar Measurements of Venus in the Post-Magellan Era
- 12:15-12:30 Akim E. L.* Zakharov A. I. Krivtsov A. P.
Venus Radar Mapping from the Venera 15 and 16 Spacecrafts: Results and Restrictions
- 12:30-1:30 **Lunch**

Tuesday, August 11, 1992
VENUS VOLCANISM
1:30 p.m. Ramo Auditorium

- Chairs:** **M. H. Bulmer**
B. Pavri
- 1:30-2:00 Head J. W. III* Crumpler L. S. Aubele J. C.
Magellan Team
Venus Volcanism: A Global Overview from Magellan Data
- 2:00-2:30 Wood J. A.*
Venus: Geochemical Conclusions from the Magellan Data
- 2:30-2:45 Burns R. G.* Straub D. W.
Mixed-Valence Iron Minerals on Venus: Fe²⁺-Fe³⁺ Oxides and Oxy-silicates Formed by Surface-Atmosphere Interactions
- 2:45-3:00 Lancaster M. G. Guest J. E.* Roberts K. M.
Head J. W. III
Large Volume Lava Flow Fields on Venus: Dimensions and Morphology
- 3:00-3:15 Magee-Roberts K.* Head J. W. III Guest J. E.
Lancaster M. G.
Extensive Lava Flow Fields on Venus: Preliminary Investigation of Source Elevation and Regional Slope Variations
- 3:15-3:30 Parker T. J.*
Application of Left and Right Looking SAR Stereo to Depth Measurements of the Ammavaru Outflow Channel, Lada Terra, Venus
- 3:30-3:45 Komatsu G.* Baker V. R.
Venusian Sinuous Rilles
- 3:45-4:00 Aubele J. C.* Crumpler L. S.
Shield Fields: Concentrations of Small Volcanic Edifices on Venus
- 4:00-4:15 Pavri B.* Head J. W. III
Venus Steep-Sided Domes: Relationships Between Geological Associations and Possible Petrogenetic Models

- 4:15-4:30 McKenzie D.* Ford P. G. Liu F. Pettengill G. H.
Pancake-like Domes on Venus
- 4:30-4:45 Ford P. G.* Pettengill G. H.
Radar Scattering Properties of Pancake-like Domes on Venus
- 4:45-5:00 Bulmer M. H.* Guest J. E. Beretan K. Michaels G.
Saunders S.
*Debris Avalanches and Slumps on the Margins of Volcanic
Domes of Venus: Characteristics of Deposits*
- 5:00-5:15 Senske D. A.* Head J. W. III
*Aila Regio, Venus: Geology and Origin of a Major Equatorial
Volcanic Rise*
- 5:15-5:30 Crumpler L. S.* Head J. W. III Aubele J. C.
*Global Correlation of Volcanic Centers on Venus with
Uplands and with Extension: Influence of Mantle
Convection and Altitude*
- 5:30-5:45 Tackley P. J.* Stevenson D. J. Scott D. R.
*Volcanism by Melt-driven Rayleigh-Taylor Instabilities and
Possible Consequences of Melting for Admittance
Ratios on Venus*
- 5:45-6:00 Sakimoto S. E. H.* Zuber M. T.
*The Effects of Venus' Thermal Structure on Buoyant
Magma Ascent*

Wednesday, August 12, 1992
TECTONIC AND INTERIOR PROCESSES I
8:00 a.m. Ramo Auditorium

- Chairs:** **V. L. Hansen**
G. E. McGill
- 8:00-8:25 Solomon S. C.*
The Tectonics of Venus: An Overview
- 8:25-8:40 Bilotti F.* Connors C. Suppe J.
Global Deformation on the Surface of Venus
- 8:40-8:55 McGill G. E.*
*Wrinkle Ridges on Venusian Plains; Indicators of Shallow
Crustal Stress Orientations at Local and Regional Scales*
- 8:55-9:10 Grosfils E. B.* Head J. W. III
*Determining Stress States Using Dike Swarms: The Lauma
Dorsa Example*
- 9:10-9:25 Törmänen T.*
*Structural Characteristics and Tectonics of Northeastern Tellus
Regio and Meni Tessera*
- 9:25-9:40 Gilmore M. S.* Head J. W. III
*Sequential Deformation of Plains Along Tessera Boundaries on
Venus: Evidence from Alpha Regio*
- 9:40-9:55 Hansen V. L.* Keep M. Herrick R. R. Phillips R. J.
*Tectonics and Volcanism of Eastern Aphrodite Terra: No
Subduction, No Spreading*
- 9:55-10:10 Moore W.* Schubert G. Sandwell D. T.
*Flexural Models of Trench/Outer Rise Topography of Coronae
on Venus with Axisymmetric Spherical Shell Elastic Plates*
- 10:10-10:25 McGovern P. J.* Solomon S. C.
*Estimates of Elastic Plate Thicknesses Beneath Large Volcanoes
on Venus*
- 10:25-10:40 Evans S. A.* Simons M. Solomon S. C.
Flexural Analysis of Uplifted Rift Flanks on Venus
- 10:40-10:55 Sandwell D. T.* Schubert G.
Evidence for Retrograde Lithospheric Subduction on Venus
- 10:55-11:20 Phillips R. J.*
Tectonic Connections to Interior Processes on Venus
- 11:20-11:35 Burt J. D.* Head J. W. III
*Thermal Buoyancy on Venus: Preliminary Results of Finite
Element Modelling*

11:35-11:50 Namiki N.* Solomon S. C.
The Gabbro-Eclogite Phase Transition and the Elevation of Mountain Belts on Venus

11:50-12:05 Sjogren W. L.*
Venus Gravity: Summary and Coming Events

12:05-1:00 Lunch

Wednesday, August 12, 1992
TECTONIC AND INTERIOR PROCESSES II
1:00 p.m. Ramo Auditorium

Chairs:
E. M. Parmentier
S. W. Squyres

1:00-1:15 Squyres S. W.* Schubert G. Bindschadler D. L.
Janes D. M. Moersch J. E. Moore W. Olson P.
Ratcliff J. T. Stofan E. R. Turcotte D. L.
The Spatial Distribution of Coronae on Venus

1:15-1:30 Kiefer W. S.*
Mantle Plumes on Venus Revisited

1:30-1:45 Simons M.* Hager B. H. Solomon S. C.
Geoid, Topography, and Convection-driven Crustal Deformation on Venus

1:45-2:00 Bindschadler D. L.*
Coldspots or Hotspots? The Origin of Plateau-shaped Highlands on Venus

2:00-2:15 Kaula W. M.* Lenardic A.
Venus Tectonic Styles and Crustal Differentiation

2:15-2:30 Parmentier E. M.* Hess P. C.
Chemical Differentiation of a Convecting Planetary Interior: Consequences for a One-Plate Planet Such as Venus

2:30-2:45 Turcotte D. L.*
Episodic Plate Tectonics on Venus

2:45-3:00 Arkani-Hamed J.* Schaber G. G. Strom R. G.
Constraints on the Thermal Evolution of Venus Inferred from Magellan Data

3:00-3:15 Solomatov V. S.* Stevenson D. J.
Melting and Differentiation in Venus With a "Cold" Start: A Mechanism of the Thin Crust Formation

3:15-3:30 Steinbach V.* Yuen D. A. Christensen U. R.
The Effects of Venusian Mantle Convection with Multiple Phase-Transitions

**OUTSTANDING PROBLEMS AND FUTURE
EXPLORATION OPPORTUNITIES**

3:00–5:00 p.m.

Chairs: C. Elachi
R. W. Vorder Bruegge

Summarizers

Donahue T. M.: *Atmosphere Evolution*

Crisp D.: *Current Atmosphere*

Luhmann J. G.: *Solar Wind Interaction*

Arvidson R. E.: *Surface Modification and Cratering*

Head J. W. III: *Venus Volcanism*

Solomon S. C.: *Tectonic and Interior Processes*

Future Exploration Opportunities—Panel Discussion

Panelists To Be Announced

PRESENTED BY TITLE ONLY

Nikishin A. M. Borozdin V. K. Burba G. A. Bobina N. N.
Venus: Geology of Beta Regio Rift System

Nikishin A. M. Burba G. A.
Venus: Preliminary Geologic Mapping of Northern Atla Regio

Nikishin A. M. Burba G. A.
*Venus: Preliminary Geologic Mapping of Southern Beta Regio-Northern
Phoebe Regio*

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- Alexopoulos J. S. Impact Cratering, Mon. p.m., Ramo Aud.
- Arkani-Hamed J. Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
- Arvidson R. E. Surficial Geology, Tue. a.m., Ramo Aud.
- Aubele J. C. Venus Volcanism, Tue. p.m., Ramo Aud.
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Solomon S. C.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
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- Akim E. L. Surficial Geology, Tue. a.m., Ramo Aud.
 Alexander D. Posters, Mon.-Wed., Dabney Lounge
 Alexander M. J. Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
 Alexopoulos J. S. Impact Cratering, Mon. p.m., Ramo Aud.
 Allen D. A. Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
 Anderson C. H. Posters, Mon.-Wed., Dabney Lounge
 Andres P. Posters, Mon.-Wed., Dabney Lounge
 Arkani-Hamed J. Posters, Mon.-Wed., Dabney Lounge
 Arkani-Hamed J. Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
 Arvidson R. E. Surficial Geology, Tue. a.m., Ramo Aud.
 Aubele J. C. Posters, Mon.-Wed., Dabney Lounge
 Aubele J. C. Venus Volcanism, Tue. p.m., Ramo Aud.
 Baker V. R. Venus Volcanism, Tue. p.m., Ramo Aud.
 Basilevsky A. T. Impact Cratering, Mon. p.m., Ramo Aud.
 Basilevsky A. T. Special Presentation, Mon. p.m., Ramo Aud.
 Basilevsky A. T. Surficial Geology, Tue. a.m., Ramo Aud.
 Beretan K. Venus Volcanism, Tue. p.m., Ramo Aud.
 Bezdard B. Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
 Bilotti F. Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
 Bindschadler D. L. Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
 Bobina N. N. Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
 Borozdin V. K. Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
 Bougher S. W. Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
 Boyce J. M. Impact Cratering, Mon. p.m., Ramo Aud.
 Bullock M. A. Surficial Geology, Tue. a.m., Ramo Aud.
 Bulmer M. H. Venus Volcanism, Tue. p.m., Ramo Aud.
 Burba G. A. Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
 Burns R. G. Venus Volcanism, Tue. p.m., Ramo Aud.
 Burt J. D. Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
 Bussey D. B. J. Posters, Mon.-Wed., Dabney Lounge
 Butler B. J. Surficial Geology, Tue. a.m., Ramo Aud.
 Campbell D. B. Impact Cratering, Mon. p.m., Ramo Aud.
 Campbell D. B. Surficial Geology, Tue. a.m., Ramo Aud.
 Chadwick D. J. Impact Cratering, Mon. p.m., Ramo Aud.
 Chadwick D. J. Posters, Mon.-Wed., Dabney Lounge
 Chodas P. W. Posters, Mon.-Wed., Dabney Lounge
 Christensen U. R. Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
 Clark J. Posters, Mon.-Wed., Dabney Lounge
 Colvin T. R. Posters, Mon.-Wed., Dabney Lounge
 Connors C. Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
 Cravens T. E. Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
 Crisp D. Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
 Crumpler L. S. Posters, Mon.-Wed., Dabney Lounge
 Crumpler L. S. Venus Volcanism, Tue. p.m., Ramo Aud.
 Davies M. E. Posters, Mon.-Wed., Dabney Lounge
 Dawson D. D. Impact Cratering, Mon. p.m., Ramo Aud.
 Dawson D. D. Surficial Geology, Tue. a.m., Ramo Aud.
 DeBergh C. Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
 De Jong E. Impact Cratering, Mon. p.m., Ramo Aud.
 Devries C. Impact Cratering, Mon. p.m., Ramo Aud.
 Donahue T. M. Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.

Duncan I.	Posters, Mon.-Wed., Dabney Lounge
Duval D. M.	Posters, Mon.-Wed., Dabney Lounge
Elachi C.	Impact Cratering, Mon. p.m., Ramo Aud.
Esposito L. W.	Posters, Mon.-Wed., Dabney Lounge
Evans S. A.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
Fahd A. K.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Ford P. G.	Surficial Geology, Tue. a.m., Ramo Aud.
Ford P. G.	Venus Volcanism, Tue. p.m., Ramo Aud.
Gaddis L. R.	Impact Cratering, Mon. p.m., Ramo Aud.
Gilmore M. S.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
Greeley R.	Surficial Geology, Tue. a.m., Ramo Aud.
Griffith D. G.	Posters, Mon.-Wed., Dabney Lounge
Grinspoon D. H.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Grinspoon D. H.	Surficial Geology, Tue. a.m., Ramo Aud.
Grosfils E. B.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
Guest J. E.	Posters, Mon.-Wed., Dabney Lounge
Guest J. E.	Venus Volcanism, Tue. p.m., Ramo Aud.
Gunn J. M.	Posters, Mon.-Wed., Dabney Lounge
Gurwell M. A.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Hager B. H.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Hansen V. L.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
Hassig P.	Impact Cratering, Mon. p.m., Ramo Aud.
Hatfield D.	Impact Cratering, Mon. p.m., Ramo Aud.
Hays J. E.	Posters, Mon.-Wed., Dabney Lounge
Head J. W. III	Posters, Mon.-Wed., Dabney Lounge
Head J. W. III	Surficial Geology, Tue. a.m., Ramo Aud.
Head J. W. III	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
Head J. W. III	Venus Volcanism, Tue. p.m., Ramo Aud.
Herrick R. R.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
Hess P. C.	Posters, Mon.-Wed., Dabney Lounge
Hess P. C.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Hodges R. R. Jr.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Holmann E.	Surficial Geology, Tue. a.m., Ramo Aud.
Houben H.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Hovenier J. W.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Ingersoll A. P.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Ivanov B. A.	Impact Cratering, Mon. p.m., Ramo Aud.
Izenberg N. R.	Surficial Geology, Tue. a.m., Ramo Aud.
Janes D. M.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Jenkins J. M.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Johnson C. L.	Posters, Mon.-Wed., Dabney Lounge
Jones E. M.	Surficial Geology, Tue. a.m., Ramo Aud.
Kargel J. S.	Posters, Mon.-Wed., Dabney Lounge
Kasting J. F.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Kauhanen K.	Posters, Mon.-Wed., Dabney Lounge
Kaula W. M.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Keddie S. T.	Posters, Mon.-Wed., Dabney Lounge
Keep M.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
Kiefer W. S.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Kirk R. L.	Impact Cratering, Mon. p.m., Ramo Aud.
Kirk R. L.	Surficial Geology, Tue. a.m., Ramo Aud.
Knibbe W. J. J.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Knudsen W. C.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.

Komatsu G.	Posters, Mon.-Wed., Dabney Lounge
Komatsu G.	Venus Volcanism, Tue. p.m., Ramo Aud.
Krause J. L.	Posters, Mon.-Wed., Dabney Lounge
Krivtsov A. P.	Surficial Geology, Tue. a.m., Ramo Aud.
Lancaster M. G.	Venus Volcanism, Tue. p.m., Ramo Aud.
Leith A.	Posters, Mon.-Wed., Dabney Lounge
Lenardic A.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Lewicki S.	Posters, Mon.-Wed., Dabney Lounge
Liu F.	Venus Volcanism, Tue. p.m., Ramo Aud.
Lovell A. J.	Posters, Mon.-Wed., Dabney Lounge
Luhmann J. G.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Magee-Roberts T.	Venus Volcanism, Tue. p.m., Ramo Aud.
Magellan Team	Venus Volcanism, Tue. p.m., Ramo Aud.
Maillard J.-P.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Maurer M. J.	Surficial Geology, Tue. a.m., Ramo Aud.
McAuley M.	Posters, Mon.-Wed., Dabney Lounge
McGill G. E.	Posters, Mon.-Wed., Dabney Lounge
McGill G. E.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
McGovern P. J.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
McKenzie D.	Venus Volcanism, Tue. p.m., Ramo Aud.
McKinnon W. B.	Impact Cratering, Mon. p.m., Ramo Aud.
Meadows V. S.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Michaels G. A.	Surficial Geology, Tue. a.m., Ramo Aud.
Michaels G. A.	Venus Volcanism, Tue. p.m., Ramo Aud.
Moersch J. E.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Moore H. J.	Impact Cratering, Mon. p.m., Ramo Aud.
Moore H. J.	Surficial Geology, Tue. a.m., Ramo Aud.
Moore W.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
Moore W.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Morgan P.	Posters, Mon.-Wed., Dabney Lounge
Moroz V. I.	Posters, Mon.-Wed., Dabney Lounge
Muhleman D. O.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Muhleman D. O.	Surficial Geology, Tue. a.m., Ramo Aud.
Na C. Y.	Posters, Mon.-Wed., Dabney Lounge
Namiki N.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
Newman M.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Newman W. I.	Surficial Geology, Tue. a.m., Ramo Aud.
Nikishin A. M.	Posters, Mon.-Wed., Dabney Lounge
Nikishin A. M.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Olson P.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Parfitt E. A.	Posters, Mon.-Wed., Dabney Lounge
Parker T. J.	Surficial Geology, Tue. a.m., Ramo Aud.
Parker T. J.	Venus Volcanism, Tue. p.m., Ramo Aud.
Parmentier E. M.	Posters, Mon.-Wed., Dabney Lounge
Parmentier E. M.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Pavri B.	Venus Volcanism, Tue. p.m., Ramo Aud.
Pettengill G. H.	Surficial Geology, Tue. a.m., Ramo Aud.
Pettengill G. H.	Venus Volcanism, Tue. p.m., Ramo Aud.
Phillips R. J.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
Piereson R. G.	Posters, Mon.-Wed., Dabney Lounge
Plaut J. J.	Surficial Geology, Tue. a.m., Ramo Aud.
Plaut J. J.	Posters, Mon.-Wed., Dabney Lounge
Raitala J.	Posters, Mon.-Wed., Dabney Lounge

Ratcliff J. T.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Roberts K. M.	Venus Volcanism, Tue. p.m., Ramo Aud.
Roddy D.	Impact Cratering, Mon. p.m., Ramo Aud.
Rogers P. G.	Posters, Mon.-Wed., Dabney Lounge
Rosenblatt M.	Impact Cratering, Mon. p.m., Ramo Aud.
Russell J.	Impact Cratering, Mon. p.m., Ramo Aud.
Sakimoto S. E. H.	Venus Volcanism, Tue. p.m., Ramo Aud.
Sandwell D. T.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
Sandwell D. T.	Posters, Mon.-Wed., Dabney Lounge
Saunders R. S.	Surficial Geology, Tue. a.m., Ramo Aud.
Saunders R. S.	Venus Volcanism, Tue. p.m., Ramo Aud.
Schaber G. G.	Impact Cratering, Mon. p.m., Ramo Aud.
Schaber G. G.	Posters, Mon.-Wed., Dabney Lounge
Schaber G. G.	Surficial Geology, Tue. a.m., Ramo Aud.
Schaber G. G.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Schloerb F. P.	Posters, Mon.-Wed., Dabney Lounge
Schubert G.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Schubert G.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
Schubert G.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Schultz P. H.	Impact Cratering, Mon. p.m., Ramo Aud.
Schultz P. H.	Posters, Mon.-Wed., Dabney Lounge
Scott D. R.	Venus Volcanism, Tue. p.m., Ramo Aud.
Scott J. F.	Posters, Mon.-Wed., Dabney Lounge
Senske D. A.	Venus Volcanism, Tue. p.m., Ramo Aud.
Shah K. P.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Shalimov I. V.	Posters, Mon.-Wed., Dabney Lounge
Simons M.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Simpson R. A.	Surficial Geology, Tue. a.m., Ramo Aud.
Sjogren W. L.	Posters, Mon.-Wed., Dabney Lounge
Sjogren W. L.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
Slyuta E. N.	Posters, Mon.-Wed., Dabney Lounge
Smrekar S. E.	Posters, Mon.-Wed., Dabney Lounge
Smynth P.	Posters, Mon.-Wed., Dabney Lounge
Soderblom L. A.	Impact Cratering, Mon. p.m., Ramo Aud.
Soderblom L. A.	Surficial Geology, Tue. a.m., Ramo Aud.
Solomatov V. S.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Solomon S. C.	Posters, Mon.-Wed., Dabney Lounge
Solomon S. C.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
Solomon S. C.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Suyres S. W.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Stacy N. J. S.	Impact Cratering, Mon. p.m., Ramo Aud.
Stacy N. J. S.	Surficial Geology, Tue. a.m., Ramo Aud.
Steffes P. G.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Steinbach V.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Stevenson D. J.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Stevenson D. J.	Venus Volcanism, Tue. p.m., Ramo Aud.
Stewart A. I. F.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Stewart J. M.	Posters, Mon.-Wed., Dabney Lounge
Stofan E. R.	Surficial Geology, Tue. a.m., Ramo Aud.
Stofan E. R.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Strangeway R. J.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Straub D. W.	Venus Volcanism, Tue. p.m., Ramo Aud.
Strom R. G.	Impact Cratering, Mon. p.m., Ramo Aud.

Strom R. G.	Posters, Mon.-Wed., Dabney Lounge
Strom R. G.	Surficial Geology, Tue. a.m., Ramo Aud.
Strom R. G.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Suppe J.	Tectonic/Interior Processes I, Wed. a.m., Ramo Aud.
Tackley P. J.	Venus Volcanism, Tue. p.m., Ramo Aud.
Tanaka K. L.	Surficial Geology, Tue. a.m., Ramo Aud.
Tavormina A. M.	Posters, Mon.-Wed., Dabney Lounge
Thompson T. W.	Posters, Mon.-Wed., Dabney Lounge
Törmänen T.	Tectonic/Interior Processes I, Wed. a.m., Romo Aud.
Travis L. D.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Turcotte D. L.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Tyler G. L.	Surficial Geology, Tue. a.m., Ramo Aud.
Waltersheid R. L.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Wauben W. M. F.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Weitz C. M.	Impact Cratering, Mon. p.m., Ramo Aud.
Weitz C. M.	Surficial Geology, Tue. a.m., Ramo Aud.
Wichman R. W.	Impact Cratering, Mon. p.m., Ramo Aud.
Wilson L.	Posters, Mon.-Wed., Dabney Lounge
Wilt R. J.	Surficial Geology, Tue. a.m., Ramo Aud.
Wood J. A.	Venus Volcanism, Tue. p.m., Ramo Aud.
Young R. E.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Yuen D. A.	Tectonic/Interior Processes II, Wed. p.m., Ramo Aud.
Zakharov A. I.	Surficial Geology, Tue. a.m., Ramo Aud.
Zasova L. V.	Posters, Mon.-Wed., Dabney Lounge
Zhang Y.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Zindler A.	Atmosphere/Solar Wind..., Mon. a.m., Ramo Aud.
Zuber M. T.	Venus Volcanism, Tue. p.m., Ramo Aud.



