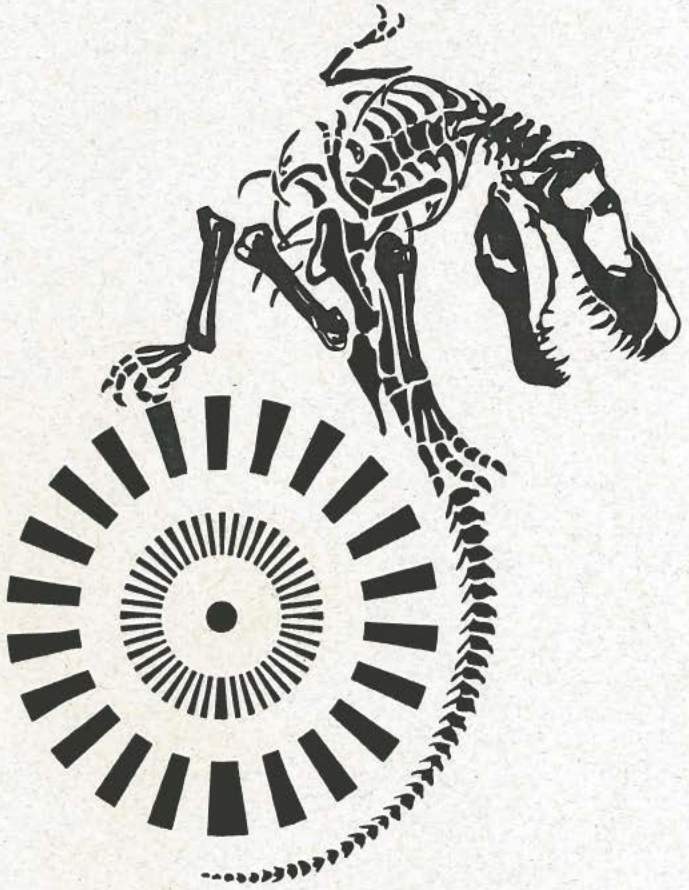

PROGRAM

New Developments Regarding the KT Event and Other Catastrophes in Earth History

FEBRUARY 9–12, 1994 • HOUSTON, TEXAS

PROGRAM

New Developments Regarding the KT Event and Other Catastrophes in Earth History

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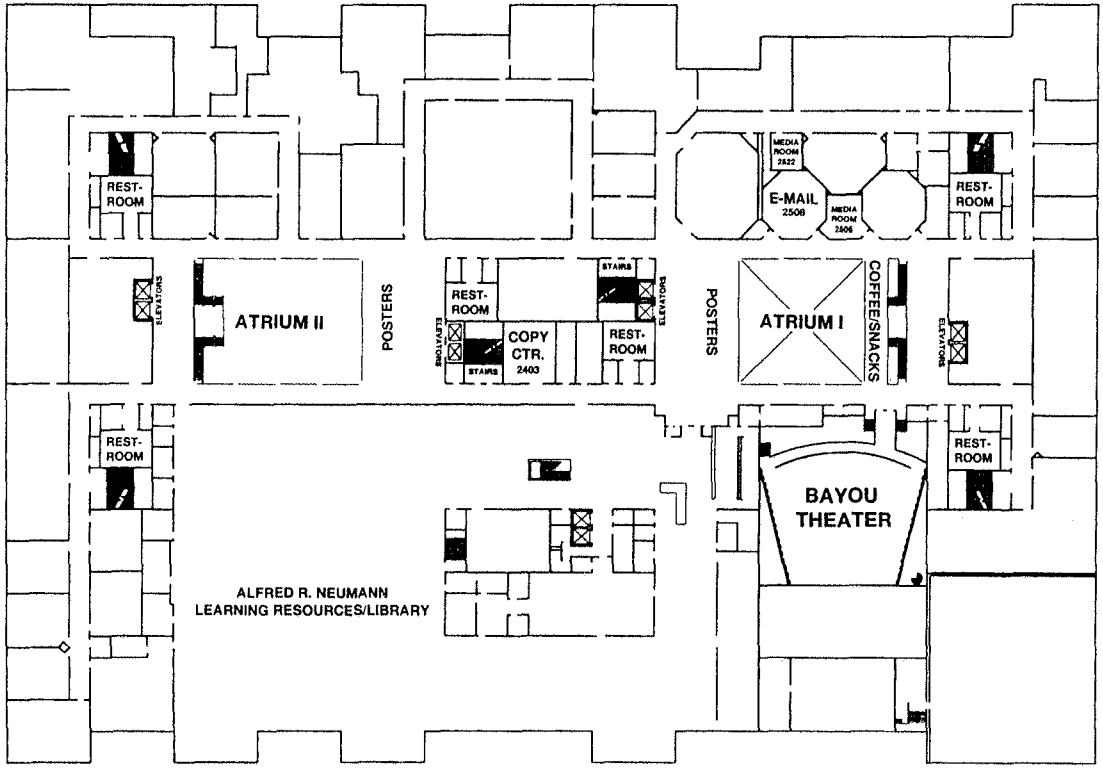

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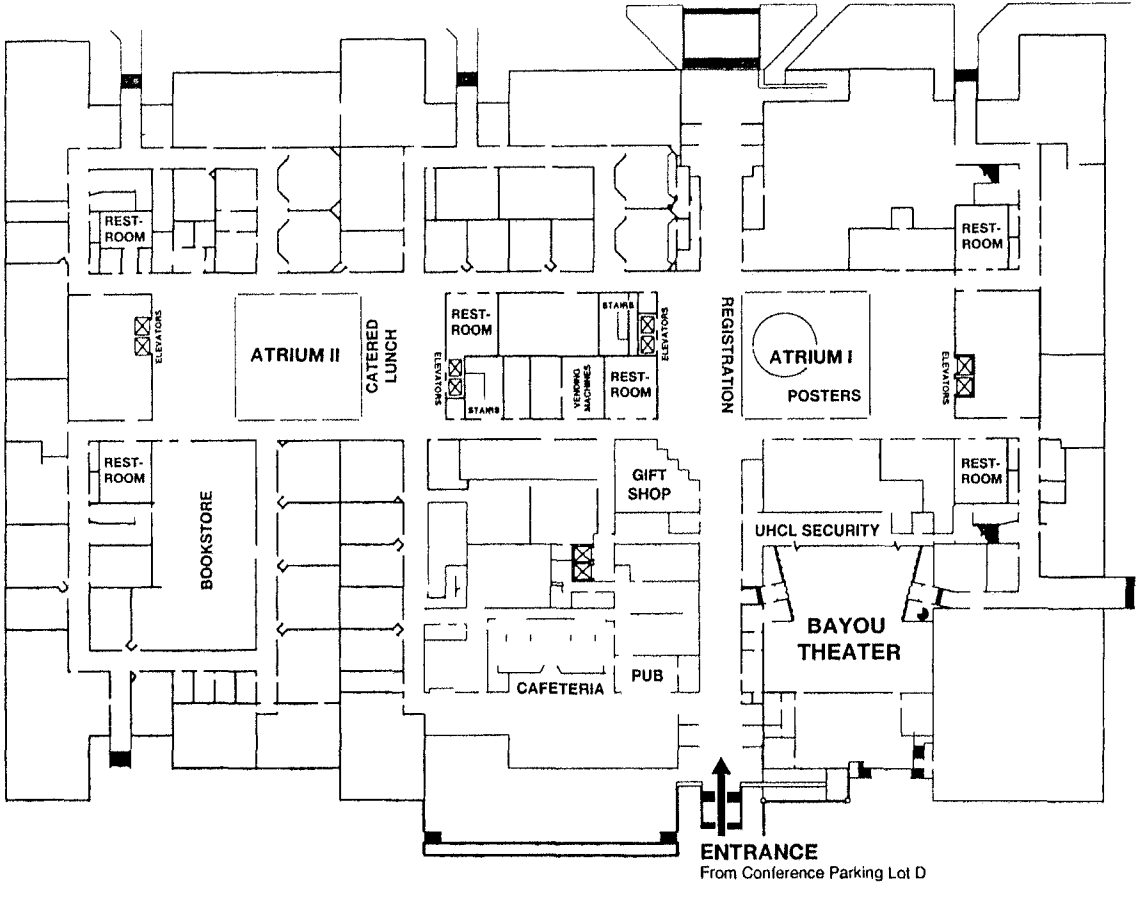
Bayou Building Second Floor



University of Houston–Clear Lake
Bayou Building First Floor

CONFERENCE INFORMATION

Messages

You may receive phone messages during the meeting at 713-283-3030 and faxes at 713-283-3039. All messages will be brought to the registration desk. Messages will not be delivered during technical sessions except in cases of emergency.

Lunches

A buffet lunch will be provided Wednesday through Saturday from 12:00 to 1:00 p.m. for all badged conference participants. Guests may purchase lunch tickets for $8 each day at the registration desk.

Social Event

A social and Tex-Mex dinner will be held at LPI on Thursday evening at 7:30 for all badged conference participants. Guest tickets may be purchased for $15 at the registration desk.

Public Session

Two distinguished speakers will present lectures open to the public on Saturday, February 12, at 7:00 p.m. Dr. Jack Horner of the Museum of the Rockies will discuss dinosaurian ecology and reproduction, and Dr. Dale Russell of the Canadian Museum of Nature will examine the evolutionary significance of dinosaurs. The lectures will be held in the auditorium of the University of Houston–Clear Lake.

Media Room and E-Mail

The media facilities will be set up in Room 2522 on Wednesday and Thursday from 8:00 a.m. to 5:00 p.m., and in Room 2506 on Friday and Saturday from 8:00 a.m. to 6:00 p.m. Facilities for checking and sending e-mail will be set up in Room 2508.

NOTE: No food or drink will be allowed in the auditorium.

NEW DEVELOPMENTS REGARDING THE KT EVENT AND OTHER CATASTROPHES IN EARTH HISTORY

February 9–12, 1994

PROGRAM

Tuesday evening, February 8, 1994

7:00–9:00 p.m. *Reception and registration, LPI Great Room*

Wednesday morning, February 9, 1994

7:30–9:00 a.m. *Registration and poster set-up, University of Houston–Clear Lake*

9:00 a.m.–12:30 p.m.

SESSION I: PERSPECTIVES

9:00 a.m. *Opening Remarks*
V. L. Sharpton

Moderator: **K. Burke**

Cyclochronologic Approaches to KT Events
T. D. Herbert, A. G. Fischer*, and S. L. D'Hondt

Mass Extinctions: Persistent Problems and New Directions
D. Jablonski*

Developments in the KT Impact Theory Since Snowbird II
W. Alvarez*, F. Asaro, P. Claeys, J. M. Grajales-N., A. Montanari, and J. Smit

Environmental Consequences of Volcanic Eruptions and Meteorite Impacts
H. Sigurdsson*

Anatomy of the KT Extinction Event
P. D. Ward*

12:30–1:30 p.m. *Lunch*

* Denotes speaker

Wednesday afternoon, February 9, 1994

1:30–2:30 p.m.

POSTER DISCUSSION: SESSIONS II and III

2:30–6:00 p.m.

SESSION II: CHICXULUB AND OTHER KT IMPACTS

Moderators: **G. Ryder**
G. A. Izett

Historical Overview of the Chicxulub Crater
A. Camargo*

The Chicxulub Multiring Basin: Evaluation of Geophysical Data, Well Logs, and Drill Core Samples
V. L. Sharpton*, L. E. Marín, and B. C. Schuraytz

New Mineralogical and Chemical Constraints on the Nature of Target Rocks at the Chicxulub Crater
E. Cedillo-P., P. Claeys, J. M. Grajales-N., and W. Alvarez

Shock Degassing of Sedimentary Rocks Due to Chicxulub Impact: Hydrocode Simulation
B. A. Ivanov*, D. D. Badukov, and O. I. Yakovlev

Numerical Simulation of Impact Cratering at Chicxulub and the Possible Causes of KT Catastrophe
T. Takata* and T. J. Ahrens

On the Origin of Regional Variations in Spinel Compositions at the KT Boundary
E. Robin*, J. Gayraud, L. Froget, and R. Rocchia

POSTER PRESENTATIONS

The Chicxulub Multiring Basin: Evaluation of Geophysical Data, Well Logs, and Drill Core Samples
V. L. Sharpton, L. E. Marín, and B. C. Schuraytz

Siderophile-Element Distribution in Chicxulub Melt Rocks: Forensic Chemistry on the KT Smoking Gun
B. C. Schuraytz and V. L. Sharpton

The "Upper Cretaceous Unit" in the Chicxulub Multiring Basin: New Age Based on Planktic Foraminiferal Assemblage
L. E. Marín, V. L. Sharpton, J. Urrutia-Fucugauchi, P. Sikora, and C. Carney

Crystals, Lithics, and Glassy Ejecta at the KT Boundary: Implications for Lithology of the Crust at the Impact Site
H. Sigurdsson, S. Smith, S. D'Hondt, S. Carey, and J.-M. Espindola

New Mineralogical and Chemical Constraints on the Nature of Target Rocks at the Chicxulub Crater
E. Cedillo-P., P. Claeys, J. M. Grajales-N., and W. Alvarez

Carbonate-derived Gases in Haitian KT Boundary Glass Spherules
R. M. Hough, H. Sigurdsson, I. A. Franchi, I. P. Wright, C. T. Pillinger, and I. Gilmour

Shock Degassing of Sedimentary Rocks Due to the Chicxulub Impact: Hydrocode Simulation
B. A. Ivanov, D. D. Badukov, and O. I. Yakovlev

Numerical Simulation of Impact Cratering at Chicxulub and the Possible Causes of KT Catastrophe
T. Takata and T. J. Ahrens

New Evidence for Primary Fractionation of Ruthenium and Iridium in the Chicxulub Ejecta Cloud
N. J. Evans, T. J. Ahrens, B. I. A. McInnes, and D. C. Gregoire

Sulfur Isotope Study of High-Calcium Impact Glasses from the KT Boundary
M. Chaussidon, H. Sigurdsson, and N. Metrich

Sulfate Volatilization, Surface-Water Acidification, and Extinction at the KT Boundary
S. D'Hondt, H. Sigurdsson, A. Hanson, S. Carey, and M. Pilson

Ni-rich Spinels (Meteoric Spinels) as Indicators of the KT Event Timing
R. Rocchia, E. Robin, L. Froget, and J. Gayraud

On the Origin of Regional Variations in Spinel Compositions at the KT Boundary
E. Robin, J. Gayraud, L. Froget, and R. Rocchia

Characteristics and Origin of Spinel-bearing Spheroids at the KT Boundary
E. Robin, L. Froget, J. Gayraud, R. Rocchia, and L. Turpin

The KT Boundary on the Pacific Plate
F. T. Kyte, J. A. Bostwick, and L. Zhou

Developments in the KT Impact Theory Since Snowbird II
W. Alvarez, F. Asaro, P. Claeys, J. M. Grajales-N., A. Montanari, and J. Smit

Estimation of the Measures of the Chicxulub Cratering Event
K. A. Holsapple

Geochemical Constraints on the Composition of Volatiles Released During the Formation of KT Impact Melts: Implications for Extinction Mechanisms
J. D. Blum and C. P. Chamberlain

Reverse-Polarity Magnetized Melt Rocks from the KT Chicxulub Structure, Yucatán Peninsula, Mexico
J. Urrutia-Fucugauchi, L. E. Marín, and V. L. Sharpton

On Source and Origin of Haitian KT Boundary Impact Glasses
C. Koeberl

Some Implications of Large Impact Craters and Basins on Venus for Terrestrial Ringed Craters and Planetary Evolution
W. B. McKinnon and J. S. Alexopoulos

Thursday morning, February 10, 1994

8:30 a.m.–12:00 p.m.

SESSION III: KT RECORD: THE GULF OF MEXICO

Moderators: **E. M. Shoemaker**
M. A. Gamper

The Chicxulub Crater and Its Relation to the KT Boundary Ejecta and Impact-Wave Deposits
A. R. Hildebrand*, F. Asaro, M. Attrep Jr., J. C. Bermúdez-Santana, S. Bonis, E. Cedillo-Pardo, P. Claeys, V. González-Casildo, J. M. Grajales-Nishimura, D. C. Grégoire, C. Ortiz-Aleman, M. Pilkington, M. A. Sánchez-Rios, J. Smit, and J. A. Stansberry

Tsunami Deposits and the KT Boundary: A Sedimentologist's Perspective
J. Bourgeois*

KT Boundary Deposits in NE Mexico: Bolide Impact or Sea-Level Lowstand?
W. Stinnesbeck*, G. Keller, and T. Adatte

Impact-Tsunami-generated Clastic Beds at the KT Boundary of the Gulf Coastal Plain: A Synthesis of Old and New Outcrops
J. Smit*, Th. B. Roep, W. Alvarez, P. Claeys, S. Montanari, and M. Grajales

Global Biotic Effects of the KT Boundary Event: Mass Extinction Restricted to Low Latitudes?
G. Keller*

The Planktonic Foraminiferal Event in the KT Boundary Succession of Mexico
J. F. Longoria* and M. A. Gamper

POSTER PRESENTATIONS

A Search for Shocked Grains in the KT Boundary at Braggs, Alabama
S. Y. Wdowiak, T. J. Wdowiak, D. C. Gillis, and M. Dudley

Biostratigraphic Evidence of the KT Boundary in the Eastern Gulf Coastal Plain, North of the Chicxulub Crater
D. Habib

The KT Boundary Along the Brazos River, Falls County, Texas: Multidisciplinary Stratigraphy and Depositional Environment
D. Beeson, S. Gartner, G. Keller, N. MacLeod, J. Medus, R. Rocchia, and E. Robin

Stratigraphical Distributions of Cosmic Markers at the KT Boundary in the Caribbean Area
R. Rocchia, L. Froget, E. Robin, and J. Gayraud

The Chicxulub Crater and Its Relation to the KT Boundary Ejecta and Impact-Wave Deposits
A. R. Hildebrand, F. Asaro, M. Attrep Jr., J. C. Bermúdez-Santana, S. Bonis, E. Cedillo-Pardo, P. Claeys, V. González-Casildo, J. M. Grajales-Nishimura, D. C. Grégoire, C. Ortiz-Aleman, M. Pilkington, M. A. Sánchez-Rios, J. Smit, and J. A. Stansberry

Stratigraphy and Sedimentology of KT Clastic Beds in the Moscow Landing (Alabama) Outcrop: Evidence for Impact-related Earthquakes and Tsunamis
J. Smit, Th. B. Roep, W. Alvarez, S. Montanari, and P. Claeys

Misunderstandings Regarding the KT Boundary Deposits in the Gulf of Mexico
J. Smit, W. Alvarez, P. Claeys, S. Montanari, and Th. B. Roep

Impact-Tsunami-generated Clastic Beds at the KT Boundary of the Gulf Coastal Plain: A Synthesis of Old and New Outcrops
J. Smit, Th. B. Roep, W. Alvarez, P. Claeys, S. Montanari, and M. Grajales

Characterization of Organic Material in KT Boundary Strata, Arroyo El Mimbral, Mexico
M. A. Kruge, J. C. Crelling, A. Montanari, B. A. Stankiewicz, and D. F. Bensley

Debris Flow/Turbidite Clastic Units at the KT Boundary, Northeastern Mexico
B. F. Bohor and W. J. Betterton

KT Boundary Deposits in Northeastern Mexico: Bolide Impact or Sea-Level Lowstand?
W. Stinnesbeck, G. Keller, and T. Adatte

Mineralogical Correlations of Near-KT-Boundary Deposits in Northeastern Mexico: Evidence for Long-Term Deposition and Volcaniclastic Influence
T. Adatte, W. Stinnesbeck, and G. Keller

KT Boundary Sections in Southern Mexico (Chiapas): Implications for the Proposed Chicxulub Impact Site
W. Stinnesbeck, T. Adatte, and G. Keller

The KT Sequence in NE Mexico: A Paleomagnetic Study
O. Campos-Enriquez, J. Urrutia-Fucugauchi, J. B. Edel, M. Westphal, and W. Stinnesbeck

Preliminary Stratigraphy and Iridium and Other Geochemical Anomalies Across the KT Boundary in the Bochil Section (Chiapas, Southeastern Mexico)
A. Montanari, P. Claeys, F. Asaro, J. Bermudez, and J. Smit

A KT Boundary Section from Northern Belize
A. C. Ocampo and K. O. Pope

12:00–1:00 p.m. *Lunch*

Thursday afternoon, February 10, 1994

1:00–2:30 p.m.

POSTER DISCUSSION: SESSIONS IV and V

2:30–6:00 p.m.

SESSION IV: KT RECORD: BIOTIC EVENTS

Moderators: **R. A. Askin**
S. Gartner

On the Reality of the KT Boundary
R. K. Olsson* and C. Liu

An Evaluation of Criteria that May be Used to Identify Species Surviving a Mass Extinction
N. MacLeod*

Calcarious Nannofossils and the KT Boundary Crisis: An Update
J. J. Pospichal*

Antarctica, the Forgotten Stepchild: A View of KT Extinction from the High Southern Latitudes
W. J. Zinsmeister* and R. M. Feldmann

Testing KT Extinction Hypotheses Using the Vertebrate Fossil Record
J. D. Archibald*

Habitat vs. Asteroid Fragmentation in Vertebrate Extinctions at the KT Boundary: The Good, the Bad, and the Untested
D. E. Fastovsky* and P. M. Sheehan

POSTER PRESENTATIONS

Biotic Effects of the KT Boundary Event in Northeastern Mexico
J. G. Lopez-Oliva and G. Keller

The Planktonic Foraminiferal Event in the KT Boundary Succession of Mexico
J. F. Longoria and M. A. Gamper

Global Biotic Effects of the KT Boundary Event: Mass Extinction Restricted to Low Latitudes?
G. Keller

Patterns of Planktonic Foraminifer Extinction at the End of Cretaceous: Stepwise, Gradual, Foreshadowed/Extended, Latitudinal Controlled, or Instantaneous?
C. Liu and R. K. Olsson

On the Reality of the KT Boundary
R. K. Olsson and C. Liu

An Evaluation of Criteria that May be Used to Identify Species Surviving a Mass Extinction
N. MacLeod

Periodicy in Planktonic Formanifera Evolutionary Trends: Facts and Causes
M. A. Gamper and J. F. Longoria

Stable Carbon Isotopic Evidence for Cretaceous Planktic Species Survivorship and Reworking
E. Barrera and B. T. Huber

Coccolithophore Extinction at the KT Boundary: Gradual or Abrupt
S. Gartner, J. Alcala, and E. Grossman

Calcarious Nannofossils and the KT Boundary Crisis: An Update
J. J. Pospichal

Results of Blind Tests to Resolve Controversies: Iridium at Gubbio; Extinctions at El Kef
R. N. Ginsburg, F. Asaro, M. Attrep Jr., J. I. Canudo, J. H. Crocket, U. Krähenbühl, B. Masters, H. T. Millard Jr., R. K. Olsson, C. J. Orth, X. Orue-extebarria, L. R. Quintana, and R. Rocchia

The KT Boundary Stratotype Section at El Kef, Tunisia: How Catastrophic Was the Mass Extinction?
G. Keller, L. Li, and N. MacLeod

Biological Changes at the KT Stratotype of El Kef (Tunisia)
P. Donze, H. Méon, R. Rocchia, E. Robin, and L. Froget

Seymour Island: A Southern High-Latitude Record Across the KT Boundary
R. A. Askin, D. H. Elliot, S. R. Jacobson, F. T. Kyte, X. Li, and W. J. Zinsmeister

Antarctica, the Forgotten Stepchild: A View of KT Extinction from the High Southern Latitudes
W. J. Zinsmeister and R. M. Feldmann

Biozonation of the Beloc Formation and Its Relation to the Chronology of the KT Boundary Event
J.-M. Florentin, R. Maurrasse, and L. J. Geier

Dissecting the KT Extinction: Components and Comparisons with the Permo-Triassic and "Modern" Mass Extinctions
P. D. Ward

Bone Beds at the Boundary: Are They a Realistic Expectation?
A. H. Cutler and A. K. Behrensmeyer

Footprints in the Rocks—New Evidence from the Raton Basin that Dinosaurs Flourished on Land Until the Terminal Cretaceous Impact Event
C. L. Pillmore, M. G. Lockley, R. F. Fleming, and K. r. Johnson

Testing KT Extinction Hypotheses Using the Vertebrate Fossil Record
J. D. Archibald

The KT Boundary Extinction: A Geologically Instantaneous or Gradual Event? Evidence from Deep-Sea Benthic Foraminifera
R. Coccioni and S. Galeotti

The KT Boundary in the Southeastern Pyrenees, Ager Basin, Northeast Spain (Lleida Province)
F. Colombo

Shallow Benthic Fauna, Their Extinction and Survival on the KT Boundary, Adriatic Platform, Slovenia
K. Drobne, B. Ogorelec, W. Lowrie, and E. Marton

Thursday evening, February 10, 1994

7:30 p.m. *Social and Tex-Mex Dinner, LPI*

Friday morning, February 11, 1994

8:30 a.m.–12:30 p.m.

SESSION V: DISTURBANCE AND RESPONSE

Moderators: **B. Schuraytz**
A. F. Gardner

Consequences of Impacts of Small Asteroids and Comets with Earth
J. G. Hills*

Global Environmental Effects of Large Impacts: A Review
R. P. Turco*, O. B. Toon, and K. Zahnle

Diamonds, Soot, and Molecules: The Geochemistry of Carbon at the KT Boundary
I. Gilmour* and W. S. Wolbach

Proposed Law of Nature Linking Impacts, Plume Volcanism, and Milankovitch Cycles to Terrestrial Vertebrate Mass Extinctions Via Greenhouse-Embryo Death Coupling
D. M. McLean*

To Be Determined
K. Johnson*

POSTER PRESENTATIONS

Consequences of the Impacts of Small Asteroids and Comets with Earth
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Global Environmental Effects of Large Impacts: A Review
R. P. Turco, O. B Toon, and K. Zahnle

Diamonds, Soot, and Molecules: The Geochemistry of Carbon at the KT Boundary
I. Gilmour and W. S. Wolbach

Organic Matter Changes Across Nonmarine KT Boundary Sections
A. F. Gardner, I. P. Wright, and I. Gilmour

To Be Determined
K. Johnson

Northern Meteoritic Impacts and Southern Volcanic Mantle Plumes: Their Roles in Generating Some Differential KT Boundary Extinction Environments
F. L. Sutherland

Habitat vs. Asteroid Fragmentation in Vertebrate Extinctions at the KT Boundary: The Good, the Bad, and the Untested
D. E. Fastovsky and P. M. Sheehan

Can an Extraterrestrial Impact Event Explain the Pattern of Biotic Crisis Near the KT Boundary?
J. K. Rigby Jr., G. P. Landis, and R. A. Hengst

Geochemical Record of the KT Event in Dinosaurian Remains from Mongolia
V. S. Samoylov and Ch. Benjamini

Rift-flooding Episodes Around 65 Ma as Causes of Abrupt Sea-Level Falls: Did the KT Impact Happen During a Time of Frequent Catastrophes
K. Burke

The Biostratigraphy and Paleogeography of Maastrichtian Inoceramids
K. G. MacLeod, B. T. Huber, and P. D. Ward

Search for Extractable Fullerenes in Clays from the KT Boundary of the Woodside Creek and Flaxbourne River Sites, New Zealand
D. Heymann, W. S. Wolbach, L. P. F. Chibante, and R. E. Smalley

12:00–1:00 p.m. *Lunch*

Friday afternoon, February 11, 1994

1:00–2:30 p.m.

POSTER DISCUSSION: SESSIONS VI and VII

2:30–6:00 p.m.

SESSION VI: OTHER EXTINCTIONS AND OTHER CAUSES

Moderators: **A. Montanari**
W. S. Wolbach

Were All Extinction Events Caused by Impacts?
P. M. Sheehan* and P. J. Coorough

Can an Extraterrestrial Impact Event Explain the Pattern of Biotic Crisis Near the KT Boundary?
J. K. Rigby Jr., G. P. Landis*, and R. A. Hengst

A Short Normal Magnetic Interval at the KT Boundary: A Measure of Continuity of Record Across the Boundary and Synchroneity of Boundary Events
J. F. Lerbekmo* and A. R. Sweet

The End-Permian Mass Extinction: A Complex, Multicausal Extinction
D. H. Erwin*

Frasnian-Famennian Boundary: Mass Extinctions, Anoxic Oceans, Microtektite Layers, But Not Much Iridium?
P. Claeys*, F. T. Kyte, and J.-G. Casier

Catastrophic Alamo Breccia, Upper Devonian, Southeastern Nevada
J. E. Warme*

POSTER PRESENTATIONS

A 74.5-m.y. Stress Schedule and Its Reflection in the Stratigraphic Periods
A. G. Fischer and N. Kitz

Supernovae and Mass Extinctions
S. van den Bergh

Extraterrestrial Accretion and Glacial Cycles
R. A. Muller

New Insights from the Osmium Record
K. Turekian

Ozone Control of Biological Activity During Earth's History, Including the KT Catastrophe
W. R. Sheldon

The Influence of Large Igneous Provinces on Mass Extinctions: Where Do We Stand?
V. Courtillot, J. J. Jaeger, and G. Féraud

KT Boundary in Deccan Intertrappeans: Chemical Anomalies and Their Implications
N. Bhandari, P. N. Shukla, Z. G. Ghevaria, and S. M. Sundaram

Elementary Carbon Associated with Volcanic Eruptions: Relevance for the KT Boundary Problem
H. J. Hansen

KT Phenomena in the Context of Tectonic Seafloor Rearrangements
Y.-G. Liu and R. A. Schmitt

The Frasnian-Famennian Extinction Event: Dominance of Extrinsic over Intrinsic Factors in the Recovery of Reef Communities
G. E. Webb

Frasnian-Famennian Boundary: Mass Extinctions, Anoxic Oceans, Microtektite Layers, but Not Much Iridium?
P. Claeys, F. T. Kyte, and J.-G. Casier

Catastrophic Alamo Breccia, Upper Devonian, Southeastern Nevada
J. E. Warme

The End-Permian Mass Extinction: A Complex, Multicausal Extinction
D. H. Erwin

The Permian-Triassic of the Gartnerkofel-1 Core (Carnic Alps, Austria): Organic Carbon Isotope Variation
W. S. Wolbach, D. R. Roegge, and I. Gilmour

New Evidence for Terrestrial Ecosystem Collapse at the KT and Permian-Triassic Boundaries
H. Brinkhuis and H. Visscher

The Pliensbachian/Toarcian (Lower Jurassic) Extinction Event
C. Little

Cyclostratigraphy of the KT Boundary Section on the Coast of the Black Sea Near Bjala (Bulgaria)
A. Preisinger

Event-, Bio-, and Magnetostratigraphy of the KT Boundary Sections in the East Balkan Area, Bulgaria
A. Preisinger and S. Aslanian

A Short Normal Magnetic Interval at the KT Boundary: A Measure of Continuity of Record Across the Boundary and Synchroneity of Boundary Events
J. F. Lerbekmo and A. R. Sweet

Were All Extinction Events Caused by Impacts?
P. M. Sheehan and P. J. Coorough

Saturday morning, February 12, 1994

9:00 a.m.–1:00 p.m.

SESSION VII: IMPACT EVENTS AND IMPACT MODELS

Moderators: **V. L. Sharpton**
C. Koeberl

Results of Blind Tests to Resolve Controversies: Iridium at Gubbio; Extinctions at El Kef
R. N. Ginsburg*, G. Asaro, M. Attrep Jr., J. I. Canudo, J. H. Crocket, U. Krähenbühl, B. Masters, H. T. Millard Jr., R. K. Olsson, C. J. Orth, X. Orue-etxbarria, L. R. Quintana, and R. Rocchia

Hydrothermal Witwatersrand Gold Mineralization Caused by the Vredefort Mega-Impact Event?
W. U. Reimold*

Where are the Chicxulub Coarse-Grained, Igneously Layered Impact Melt Rocks Analogous to Those at Sudbury?
P. H. Warren*, P. Claeys, and E. Cedillo-Pardo

Impact Materials Recovered by Research Core Drilling in the Manson Impact Structure, Iowa
R. R. Anderson*, B. J. Witzke, and J. B. Hartung

Gaia, Cambrian Explosion, and KT Catastrophe
K. J. Hsü*, G. Shields, and D. Hollander

The Crash of P/Shoemaker-Levy 9 into Jupiter and Its Implications for Comet Bombardment on Earth
E. M. Shoemaker* and C. S. Shoemaker

POSTER PRESENTATIONS

Where are the Chicxulub Coarse-Grained, Igneously Layered Impact Melt Rocks Analogous to Those at Sudbury?
P. H. Warren, P. Claeys, and E. Cedillo-Pardo

First Observations of Shatter Cones in the Direct Vicinity of the Bushveld Complex
W. U. Reimold and R. C. A. Minnitt

The Highbury Structure: A New Impact Crater in Northwest Zimbabwe
S. Master, W. U. Reimold, D. Brandt, C. Koeberl, D. Robertson, and L. A. G. Antoine

Impact Materials Recovered by Research Core Drilling in the Manson Impact Structure, Iowa
R. R. Anderson, B. J. Witzke, and J. B. Hartung

Eocene Age of the Kamensk Buried Crater of Russia
G. A. Izett, V. L. Masaitis, E. M. Shoemaker, G. B. Dalrymple, and M. B. Steiner

Re-Os Isotope Systematics as a Diagnostic Tool for the Study of Impact Craters
C. Koeberl, S. B. Shirey, and W. U. Reimold

Preliminary Results Regarding the Formation Conditions of Meteoric Spinels
J. Gayraud, E. Robin, R. Rocchia, and L. Froget

A Search for Tektite-related Impact Structures in Northeastern Thailand: An Examination of SPOT Satellite Images
J. F. McHone Jr., K. Pitakpaivan, S. Bunopas, P. Angsuwathana, T. Supajanya, and J. T. Wasson

An Extraterrestrial Event at the Tertiary-Quaternary Boundary
H. Peng

Visualizing the Nature and Consequences of the Chicxulub Impactor: Clues from Venus
P. H. Schultz

Axial Focusing of Impact Energy in the Earth's Interior: Proof-of-Principle Tests of a New Hypothesis
M. B. Boslough, E. P. Chael, T. G. Trucano, M. E. Kipp, and D. A. Crawford

A General Theory of Impacts and Mass Extinctions, and the Consequences of Large-Body Impact on the Earth
M. R. Rampino

The Crash of P/Shoemaker-Levy 9 into Jupiter and Its Implications for Comet Bombardment on Earth
E. M. Shoemaker and C. S. Shoemaker

Modulating Terrestrial Impacts from Oort Cloud Comets by the Adiabatically Changing Galactic Tides
J. J. Matese, P. G. Whitman, K. A. Innanen, and M. J. Valtonen

In Search of Nemesis
S. Carlson, T. Culler, R. A. Muller, M. Tetreault, and S. Perlmutter

Gaia, Cambrian Explosion, and KT Catastrophe
K. J. Hsü, G. Shields, and D. Hollander

KT Boundary: Historical Context, Counter-Revolutions, and Strawmen
G. Ryder

Science Observed: The Mass-Extinction Debates
W. Glen

Trajectories of Ballistic Impact Ejecta on a Rotating Earth
W. Alvarez

Saturday evening, February 12, 1994

PUBLIC LECTURES
7:00 p.m., UH Auditorium

The Compleat T. Rex
J. Horner

Dinosaurs in the Scheme of Things
D. A. Russell