

**ICSU WORKSHOP:
COMET/ASTEROID IMPACTS AND HUMAN SOCIETY
Programme**

**November 27 – December 2, 2004
Santa Cruz de Tenerife**

Objective

The International Council for Science (ICSU) recently recognized that the societal implication (social, cultural, political and economic) of a comet/asteroid impact on Earth warrants an immediate consideration by all countries in the world. Given the paucity of information on this important issue, ICSU is sponsoring a multi-union effort to hold a specialized “think-tank” workshop on the various aspects associated with such an event. The aim of the workshop is to bring together individuals who represent different aspects concerning comet/asteroid impacts and human society. The goal of the workshop is to produce a timely state-of-the-art synthesis regarding the likelihood and implications of a comet/asteroid impact and its effect on human society in the form of a “white paper”. This position statement should be an unbiased consensus of the various participants regarding this type of event and will be used by ICSU and others to positively influence governments at the highest level around the world to begin to take preparatory action to deal with a possible comet/asteroid impact in the next century.

Union Sponsors

International Astronomical Union
International Union of Geological Sciences
International Union of Geodesy and Geophysics
International Union of Psychological Sciences
International Geographical Union

Workshop Organizers

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Advisory Group

Harry Atkinson (UK NEO Task Force), Clark Chapman (Member at Large), Viacheslav Gusiakov (IUGG), Wing-Huen Ip (COSPAR), Michael MacCracken (SCOR) and Stefan Michalowski (OECD)

Workshop Location

Museo de las Ciencias y el Cosmos
Avenida de los Menceyes, 70
San Cristóbal de La Laguna
Santa Cruz de Tenerife
SPAIN

Email: mcc@museosdetenerife.org

DAILY SCHEDULE

November 27 (Saturday)

All participants should have arrived by this day. Registration and a welcome cocktail will be provided at the Museum.

7:30 pm Dinner is pre-booked at a local Italian restaurant.

November 28 (Sunday) – Morning/Afternoon

11:30 am ***Local Fieldtrip (return by 6:00 pm)***

The Teide Observatory is set on a small peak (2340-m) in the pre-park of the Las Cañadas National Park, some 37km from the 3718-m peak of Mount Teide. The observatory is a combined solar and nocturnal centre, with the largest telescope at present 1.5-m in diameter. There are three operational or nearly operational solar towers, the largest being the 1.5-m Gregor Telescope of the Kipenhauer Institute, which is being installed in an existing tower, and a solar laboratory for helioseismology. Seven nocturnal telescopes are either in use or being prepared for use, ranging from the 10-cm "STARE" Telescope, to the 1.5-m Carlos Sánchez Telescope for the infrared. There are also three radio installations to observe the cosmic microwave background. The observatory offers magnificent views of the volcanoes on the Las Cañadas plateau, including the site of the eruption in 1806 just 2-km from the observatory. It is reached by a good, although occasionally winding 38-km road from La Laguna, which passes through "prehistoric" Laurisilva forest, pine forest and finally cuts through the lava and pyroclastic ash flows of ancient eruptions of Mount Teide.

A local volcanologist will give a short presentation in the observatory about the history of the island and the catastrophic collapse of the old caldera. Lunch is included and will be at a location close to the observatory.

November 28 (Sunday) – Evening

7:30 pm Dinner booked at local restaurant.

November 29 (Monday) – Morning/Afternoon

8:30 am ***Introduction to the Workshop***

Hans Rickman
Peter Bobrowsky
Mark Kidger

8:45 am *Invited Keynote Technical Presentations*

State of the art reviews (30 minute Keynote Presentations) prepared for a general audience on a particular theme by invited speakers. The purpose of the technical talks is to broaden the perspective and knowledge base of the various participants.

- 8:45 – 9:10** Identifying the problem of NEOs: why are we here? (Chapman)
- 9:15 – 9:45** Populations of potential impactors: where are we from an astronomical perspective? (Bottke)
- 9:45 – 10:15** Evaluating the risks of impacts and the efficiency of risk reduction (Valsecchi)
- 10:15 – 10:30** **COFFEE**
- 10:30 – 11:00** The geological record for past impacts (Grieve)
- 11:00 – 11:30** The recent archaeological record (Masse)
- 11:30 – 12:00** Tunguska event (Longo)
- 12:00 – 1:00** **LUNCH**
- 1:00 – 1:30** Direct effects: tsunamis (Bryant)
- 1:30 – 2:00** Direct effects: energy, dust and fires (Melosh)
- 2:00 – 2:30** Indirect effects: chemical and climatic consequences of impacts (Birks)
- 2:30 – 3:00** Economic implications to society (Dore)
- 3:00 – 3:15** **COFFEE**
- 3:15 – 3:45** Psychological consequences (Slovic)
- 3:45 – 4:15** Sociological consequences (Hewitt)
- 4:15 – 4:45** Communicating impact risks to the public (Hermelin)
- 4:45 – 5:15** Political issues (Michalowski)
- 5:15 – 5:30** Closing Comments

November 29 (Monday) – Evening

- 6:00 pm** Vineyard trip, dinner included. Departure from the Hotel at 6:00 pm

November 30 (Tuesday) – Morning/Afternoon

8:45 am Breakout Discussions

Participants have been assigned to one of 3 working groups. Each group will convene in a separate room at the Museum will evaluate the exact same set of issues/questions.

GROUP 1	GROUP 2	GROUP 3
Kolesnikov (p)	Baillie (p)	Hartwell (p)
Kundt (p)	Veski (p)	Master (p)
Longo	Gusiakov (p)	MacCracken (p)
Masse	Martinez-Frias (p)	Side (p)
Carusi (p)	Grieve	Birks
Bottke	Hermelin	Melosh
Chapman	Andersen (p)	Morton (p)
Levasseur-Regourd (p)	Dore	Valsecchi
Hewitt	Michalowski	Foster (p)
McGuire (p)	Kovacs (p)	Bryant
Morrison (p)	Slovic	Villar-Hernandez (p)
Gardner (p)	Marsden (p)	Bobrowsky
Hernandez (p)	Kidger (p)	
Rickman		

Non-keynote participants (p) will have the opportunity to present a maximum 10 - minute power point presentation once during the day. All presentations must be in power point and must be pre-loaded on the workshop computers. Participants will NOT be allowed to connect their personal laptops to the power point projectors.

Session 10 Minute Presentations (Group Number)

V – Carusi (1), Andersen (2), Gusiakov (2), Side (3), Hartwell (3)

R – McGuire (1), Morrison (1), Kovacs (2), Martinez-Frias (2), Foster (3)

S – Gardner (1), Levasseur-Regourd (1), Kidger (2), Marsden (2), Morton (3)

D – Kolesnikov (1), Kundt (1), Baillie (2), Veski (2), Master (3),
MacCracken (3), Villar-Hernandez (3)

Breakout Session Themes

V – Vulnerability of society: increasing or decreasing?

R – Reduction of consequences, societal disaster plan.

S – Surprise impacts, near misses, failed predictions.

D – Do we fully understand the impact consequences?

November 30 (Tuesday) – Morning/Afternoon

8:45 – 9:00 ***Introduction and Instructions***

9:00 – 10:30 ***Session #1***

Group 1 – V (Chair Morrison) (Talks: Carusi)

Group 2 – R (Chair Hermelin) (Talks: Kovacs, Martinez-Frias)

Group 3 – D (Chair MacCracken) (Talks: Master, MacCracken, Villar-Hernandez)

10:30 – 11:00 ***Coffee Break***

11:00 – 12:30 ***Session #2***

Group 1 – S (Chair Masse) (Talks: Gardner, Levasseur-Regourd)

Group 2 – D (Chair Kovacs) (Talks: Baillie, Veski)

Group 3 – R (Chair Sidle) (Talks: Foster)

12:30 – 1:45 ***Lunch***

2:00 – 3:30 ***Session #3***

Group 1 – D (Chair McGuire) (Talks: Kolesnikov, Kundt)

Group 2 – S (Chair Grieve) (Talks: Kidger, Marsden)

Group 3 – V (Chair Bryant) (Talks: Sidle, Hartwell)

3:30 – 4:00 ***Coffee Break***

4:00 – 5:30 ***Session #4***

Group 1 – R (Chair Hewitt) (Talks: McGuire, Morrison)

Group 2 – V (Chair Slovic) (Talks: Andersen, Gusiakov)

Group 3 – S (Chair Melosh) (Talks: Morton)

November 30 (Tuesday) – Evening

7:00 pm Gala Dinner at the History Museum and short guided walking tour of the historic buildings of La Laguna.

December 1 (Wednesday) Morning/Afternoon

8:45 am – Introduction

9:00 am – Summary Discussions

All participants will reconvene in the Museum Auditorium for the day. Two hours will be allotted to the 12 Facilitators who will each provide 10-minute summaries highlighting the main points of discussion in their own group.

12:30 – 1:45 pm Local lunch

2:00 – 4:30 pm - Open Discussion

The afternoon will consist of Open Forum comments and discussion. Participants will be asked to agree on key conclusions and implications, recommendations for future action and general statements of scientific unanimity concerning comet/asteroid impacts and human society.

4:30 – Concluding Comments

December 1 (Wednesday) – Evening

6:00 pm Public event and dinner at local restaurant

December 2 (Thursday) – Participant Departure

Participants are asked to officially depart the workshop on this day.