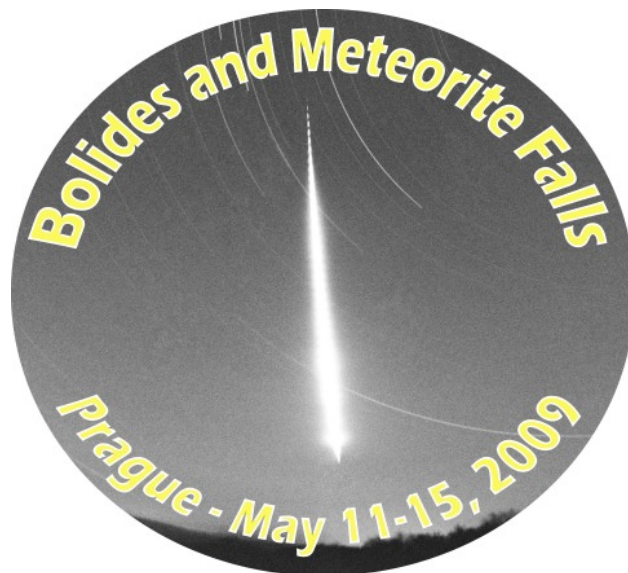


Bolides and Meteorite Falls

*International conference on the occasion of the 50th anniversary
of the Příbram meteorite fall, and the 80th birthday of
Zdeněk Ceplecha*

PRELIMINARY
CONFERENCE PROGRAM

(issued April 24, 2009)



Hotel Michael, Prague, Czech Republic, May 11–15, 2009

Scientific Organizing Committee

Phil Bland (UK)

Jiří Borovička (Czech Republic)

Peter Brown (Canada)

Guy Consolmagno (Vatican)

Edwin Gnoss (Switzerland)

Dee Pack (USA)

Olga Popova (Russia)

Doug ReVelle (USA)

Pavel Spurný (Czech Republic)

David Vokrouhlický (Czech Republic)

Contacts

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SUNDAY, May 10

Academy of Sciences

- 17:00 Start of registration at the Academy of Sciences of the Czech Republic, Národní 3, Prague 1
- 18:00 Opening of the exhibition "Bolides and meteorite falls: 50 years from the fall of Příbram meteorites"
- 18:30 Welcome cocktail at the Academy of Sciences (room 108)
- 20:00 End of registration at the Academy of Sciences

MONDAY, May 11

Hotel Michael

8:00 Start of registration at Hotel Michael (open until 17:00)

9:00 Opening of the conference

Scientific session 1

The 80th birthday of Zdeněk Ceplecha and the 50th anniversary of the Příbram meteorite fall

Chair: Vladimír Porubčan

9:20–9:50 **D. O. ReVelle**

THE SCIENTIFIC LEGACY OF DR. ZDENEK CEPLECHA, ASTRONOMER
EXTRAORDINAIRE

9:50–10:30 **Z. Ceplecha**

PŘÍBRAM EVENT, THE METEOR SCIENCE MILESTONE (invited)

Coffee break

Scientific session 2

Recent observed meteorite falls

Chair: Olga Popova

11:00–11:30 **P. Spurný**, P. A. Bland, J. Borovička, Z. Ceplecha, L. Shrubený, T. McClafferty, A. Singleton, A. W. R. Bevan, D. Vaughan, M. C. Towner, G. Deacon

THE BUNBURRA ROCKHOLE METEORITE FALL IN SW AUSTRALIA:
DETERMINATION OF THE FIREBALL TRAJECTORY, DYNAMICS, ORBIT,
LUMINOSITY AND IMPACT POSITION FROM PHOTOGRAPHIC RECORDS (invited)

11:30–11:50 P. A. Bland, P. Spurný, **M. C. Towner**, J. Borovička, A. W. R. Bevan, A. T. Singleton, S. R. Chesley, W. F. Bottke Jr., L. Shrubený, Z. Ceplecha, T. P. McClafferty, D. Vaughan, G. K. Benedix, G. Deacon

FIRST RECOVERY FROM THE DESERT FIREBALL NETWORK: A EUCRITE
DELIVERED FROM AN ATEN-TYPE ORBIT

11:50–12:10 **E. P. Milley**, A. R. Hildebrand, P. J. A. McCausland, M. Beech, L. A. Maillet

CONSTRAINING THE ORBIT OF THE H4 METEORITE FALL, NOVEMBER 20, 2008
AT BUZZARD COULEE, SASKATCHEWAN

Lunch

Scientific session 3

Fireball networks and observations**Chair:** Tadeusz Jopek

- 14:00–14:20 **P. B. Babadzhanov, G. I. Kokhirova, J. Borovička, P. Spurný**
FIREBALL NETWORK IN TAJIKISTAN AND SOME RESULTS OF OBSERVATIONS
- 14:20–14:40 **W. N. Edwards, P. G. Brown, R. J. Weryk**
DEVELOPMENT OF THE SOMN ALL-SKY CAMERA NETWORK
- 14:40–15:00 **P. Spurný, J. Borovička, Z. Ceplecha, L. Shrbený**
CURRENT STATUS OF FIREBALL OBSERVATIONS IN THE CZECH REPUBLIC –
INSTRUMENTS, METHODS AND EXAMPLES OF RESULTS
- 15:00–15:20 **I. P. Williams, J. M. Trigo-Rodríguez, J. M. Madiedo, A. J. Castro-Tirado, J. Llorca, S. Vitek, M. Jelínek**
OBSERVATIONS OF A BRIGHT FIREBALL AND THE COMETARY NATURE OF ITS
PROGENITOR
- poster #1* **V. Porubčan, J. Svoreň, M. Husárik, Z. Kaňuchová**
BOLIDE STATIONS IN THE SLOVAK REPUBLIC
- poster #2* **D. Heinlein, J. Oberst, J. Flohrer**
FIREBALL PHOTOGRAPHY AND METEORITE RECOVERY IN GERMANY
- poster #3* **N. A. Konovalova**
ORBITS AND FRAGMENTATION OF FIREBALLS OF AUGUST FAMILY

Coffee break

Scientific session 4

Special observations of bolides and satellite re-entries**Chair:** Doug ReVelle

- 16:00–16:30 **J. Borovička**
SPECTROSCOPY OF BOLIDES – A HISTORICAL PERSPECTIVE (invited)
- 16:30–17:00 **P. Jenniskens**
A REVIEW OF SATELLITE REENTRY OBSERVING CAMPAIGNS
- 17:00–17:30 **P. Brown**
SATELLITE OBSERVATIONS OF FIREBALLS
- poster #4* **N. A. Konovalova, O. A. Alimov**
THE SUPERBOLIDE OF JULY 23, 2008, TAJIKISTAN. PHOTO, VIDEO AND SEISMIC
RECORDS

Presenting authors are given in bold

TUESDAY, May 12

Hotel Michael

8:30–12:00 Registration desk open

Scientific session 5

Physical properties of meteorites and meteoroids

Chair: David Vokrouhlický

9:00–9:30 **G. Consolmagno**, D. Britt, R. Macke

PHYSICAL PROPERTIES OF METEORITES: A REVIEW (invited)

9:30–9:50 **T. Kohout**, L. J. Pesonen

MOBILE LABORATORY FACILITY FOR MEASUREMENT OF METEORITE
PHYSICAL PROPERTIES

9:50–10:10 **D. Čapek**, D. Vokrouhlický

THE THERMAL STRESSES AND DESTRUCTION OF METEORIODS IN THE SPACE
DUE TO DIURNAL TEMPERATURE VARIATIONS

10:10–10:30 **J. Vaubaillon**, W. Reach

THE DYNAMICS OF COMETARY FRAGMENTS AND METEORIODS

poster #5 **V. Filonenko**, K. Churyumov

LIGHT CURVE AND PHOTOMETRICAL EVOLUTION OF COMET
73P/SCHWASSMANN-WACHMANN 3

Coffee break

Scientific session 6

Determination of meteoroid properties from bolide observations

Chair: Jack Baggaley

11:00–11:30 **P. Brown**, D. O. ReVelle, W. N. Edwards

DETERMINING FIREBALL PROPERTIES FROM INFRASOUND OBSERVATIONS
(invited)

11:30–11:50 **V. P. Stulov**, N. G. Barri, M. I. Gitsevich

DETERMINATION OF THE METEOROID PARAMETERS FROM OBSERVATIONS

11:50–12:10 **M. Gritsevich**

IDENTIFICATION OF THE METEORITE-PRODUCING FIREBALLS

12:10–12:30 **L. Shrbený**, P. Spurný

DIFFERENCES BETWEEN SHOWER FIREBALLS AND METEORITE DROPPING
ONES

poster #6 **N. V. Popelenskaya**

THE AVERAGE DENSITIES VALUE OF SMALL METEORIC BODIES

Lunch

Scientific session 7

Interaction of meteoroids with atmospheres

Chair: Wayne Edwards

- 14:00–14:30 **D. O. ReVelle**
IMPLICATIONS OF METEOR AND BOLIDE ENTRY SOLUTIONS FOR 100%
DIFFERENTIAL ACOUSTIC EFFICIENCY (invited)
- 14:30–14:50 **P. Spurný**, J. Borovička, Z. Ceplecha
MILISECOND STRUCTURE OF LIGHT CURVES OF FIREBALLS
- 14:50–15:10 **K. Wimmer**
STUDIES OF METEORITE DRAG-SHAPE FACTORS DURING DARK FLIGHT
- 15:10–15:30 I. A. Zhdan, **V. P. Stulov**, P. V. Stulov, L. I. Turchak
DRAG COEFFICIENTS FOR BODIES OF METEORITE-LIKE SHAPES AND
FEATURES OF MOVEMENT OF BODIES UNDER ANGLE OF ATTACK

Coffee break

Scientific session 8

Modelling of bolides

Chair: Iwan Williams

- 16:00–16:30 **O. Popova**
MODELLING OF BOLIDES (invited)
- 16:30–16:50 **C. Mordasini**, W. Benz, Y. Alibert
A NEW THEORETICAL MODEL FOR THE INTERACTION OF LARGE
METEORIODS WITH PLANETARY ATMOSPHERES
- 16:50–17:10 **N. Barri**
INTERACTION OF FRAGMENTS IN A SUPERSONIC FLOW. COLLIMATION
EFFECT
- 17:10–17:30 **N. V. Popelenskaya**
THE ANALYSIS OF APPROXIMATIONS FOR DETERMINATION OF HEAT
EXCHANGE PARAMETERS FOR LARGE METEORIC BODIES
- poster #7* **N. Barri**, I. Zhdan, P. Stulov
MUTUAL INFLUENCE OF PROXIMAL FRAGMENTS IN A SUPERSONIC FLOW

WEDNESDAY, May 13

Hotel Michael

8:30–12:00 Registration desk open

Scientific session 9

The story of 2008 TC₃

Chair: Petr Pravec

9:00–9:20 **P. Scheirich**, J. Ďurech, P. Pravec, M. Kozubal, R. Dantowitz, M. Kaasalainen
A NON-PRINCIPAL AXIS ROTATION OF 2008 TC₃

9:20–9:40 Z. Charvát, **J. Borovička**
METEOSAT OBSERVATION OF 2008 TC₃ ATMOSPHERIC ENTRY OVER SUDAN

9:40–10:10 **P. Jenniskens**, M. H. Shaddad
THE IMPACT OF ASTEROID 2008 TC₃ AS OBSERVED IN NORTHERN SUDAN
(invited)

10:10–10:30 **D. O. ReVelle**, P. Brown
ENTRY DYNAMICS AND ENERGETICS MODELING OF 2008TC₃ WITH
INDEPENDENT INFRASONIC DETECTIONS MADE USING TIMING, LOCATION
ANALYSIS AND SOURCE ENERGY ESTIMATES

Coffee break

Special discussion I

Bolide observations and their interpretation

11:00–12:30

Chair: Peter Brown

Topics

- What we learned from the first dozen of observed meteorite falls
- The future of bolide observations; methods, techniques, and their combinations
- Improving the prospects for meteorite recoveries
- Derivation of initial meteoroid properties (mass, density, porosity, strength, . . .)
- Physical processes during the meteoroid penetration through the atmosphere

Lunch

14:00 Departure to Ondřejov from Hotel Michael

15:00 Excursion at the Ondřejov Observatory (meteor cameras, 2-m stellar telescope, 65-cm telescope for asteroid photometry, solar spectrograph, historical buildings and museum)

18:00 Dinner at the Ondřejov Observatory

20:00 Arrival to Hotel Michael

THURSDAY, May 14

Hotel Michael

8:30–12:00 Registration desk open

Scientific session 10

Near-Earth meteoroid population and meteorite falls

Chair: Peter Jenniskens

9:00–9:30 P. Vereš, **R. Jedicke**, R. Wainsoat, M. Granvik, S. Chesley, S. Abe, L. Denneau, T. Grav
DETECTION OF EARTH-IMPACTING ASTEROIDS WITH THE NEXT GENERATION
ALL-SKY SURVEYS

9:30–9:50 **S. Abe**
METEOR AND METEORITE ASSOCIATIONS DETECTING BY PAN-STARRS

9:50–10:10 **M. Robson**
WESTON: ATMOSPHERIC TRAJECTORY FROM HISTORICAL OBSERVATIONS

10:10–10:30 **M. Lunn**
THE MIDDLESBROUGH METEORITE

Coffee break

Scientific session 11

Sources of meteorites

Chair: Robert Jedicke

11:00–11:30 **D. Nesvorný**
ASTEROIDAL SOURCE OF L CHONDRITE METEORITES (invited)

11:30–11:50 **J. de León**, J. Licandro, N. Pinilla-Alonso, H. Campins, M. Serra-Ricart
THE MB-NEA-OC CONNECTION REVISITED: COMPOSITIONAL DIFFERENCES
AND SIZE-DEPENDENT TRANSPORT MECHANISMS

11:50–12:10 **J. Baggaley**, R. Soja
FIREBALL STREAMS AND METEORITES DELIVERED BY NEAR EARTH
ASTEROIDS

12:10–12:30 P. B. Babadzhanov, **I. P. Williams**, G. I. Kokhirova
METEOROID STREAMS AND ASSOCIATED NEO'S THAT ARE CAPABLE OF
PRODUCING LARGE FIREBALLS

Lunch

Scientific session 12
Meteoroid and meteorite streams

Chair: David Nesvorný

- 14:00–14:20 **G. B. Valsecchi**, Cl. Froeschlé, T. Jopek
 THE DISPERSION OF STREAMS CAUSED BY PLANETARY ENCOUNTERS
- 14:20–14:40 L. Kornoš, **J. Tóth**, P. Vereš
 EVOLUTION OF POSSIBLE METEORITE STREAM OF PŘÍBRAM
- 14:40–15:00 **P. Koten**, P. Spurný
 SEARCH FOR FAINT METEORS ASSOCIATED WITH
 PŘÍBRAM-NEUSCHWANSTEIN METEORITE STREAM
- 15:00–15:15 R. Soja, **J. Baggaley**, D. Hamilton, P. Brown
 BOLIDES GENERATED FROM RESONANCES IN THE TAURID STREAM
- 15:15–15:35 **T. J. Jopek**, P. Koten, P. Pecina
 METEOROID STREAMS IDENTIFICATION AMONGST 231 SOUTHERN
 HEMISPHERE VIDEO METEORS

Coffee break

Special discussion II
Sources of meteorites, meteorite flux and streams
 16:00–17:30

Chair: Giovanni Valsecchi

Topics

- Parent bodies of meteorites of various types
- Cometary origin of meteorites
- Existence of Příbram-Neuschwanstein meteoroid stream
- Lifetime of meteoroid streams and cosmic ray exposure times of meteorites
- Flux of large meteoroids, airbursts, craters, tsunamis and other hazards
- Observation of meteoroids in space

FRIDAY, May 15

Hotel Michael

8:30–12:00 Registration desk open

Scientific session 13

Dark flight, strewn fields and craters

Chair: Edwin Gnos

9:00–9:30 **K. Wimmer**, E. Gnos, B. Hofmann, A. Al-Kathiri, L. Huber, I. Leya
FROM 2 TO 4 DIMENSIONS: MODELLING THE STREWN FIELD OF JAH 073,
SULTANATE OF OMAN

9:30–9:50 **M. C. Towner**, P. A. Bland, P. Spurný
MONTE CARLO DARKFLIGHT MODELLING AND SEARCH STRATEGIES TESTED
IN THE RECOVERY OF BUNBURRA ROCKHOLE FRAGMENTS

9:50–10:05 **J. Mizera**, Z. Řanda, V. Havránek, J. Kučera
IMPACT ORIGIN OF MOLDAVITES AND OTHER TEKTITES

10:05–10:20 **V. Porubčan**, A. J. T. Jull, J. Masarik, P. Povinec, I. Rojkovic, R. Schultz, I. Sýkora
RUMANOVA METEORITE

poster #8 **J. Echaurren**
IMPACT CONDITIONS FOR VREDEFORT CRATER

Coffee break

Scientific session 14

Analyses and collection of meteorites

Chair: Guy Consolmagno

11:00–11:20 **M. Bukovanská**
PŘÍBRAM – HISTORY OF THE PETROLOGICAL STUDIES

11:20–11:40 **G. Heusser**
PREATMOSPHERIC MASS ESTIMATES OF PŘÍBRAM BY COSMOGENIC
RADIONUCLIDES

11:40–12:00 **K. Wimmer**
ASPECTS OF A EUROPEAN LEGISLATION FOR METEORITE RECOVERY

12:00–12:20 **J. Martinez-Frias**, J. A. Rodriguez-Losada, R. Lunar Hernandez, F. Rull Perez, F. J. Madero Jarabo, F. Garcia Talavera, A. Perez Verde and S. Hernandez-Fernandez
METEORITES AS ‘GEOLOGICAL HERITAGE’ IN THE NEW SPANISH LEGISLATION:
CURRENT STATE, SCIENTIFIC AND ETHICAL PRACTICE, AND INTERNATIONAL
IMPLICATIONS REGARDING GEODIVERSITY IN THE EARTH AND SOLAR
SYSTEM

12:20 Closing remarks, closure of the conference

Lunch