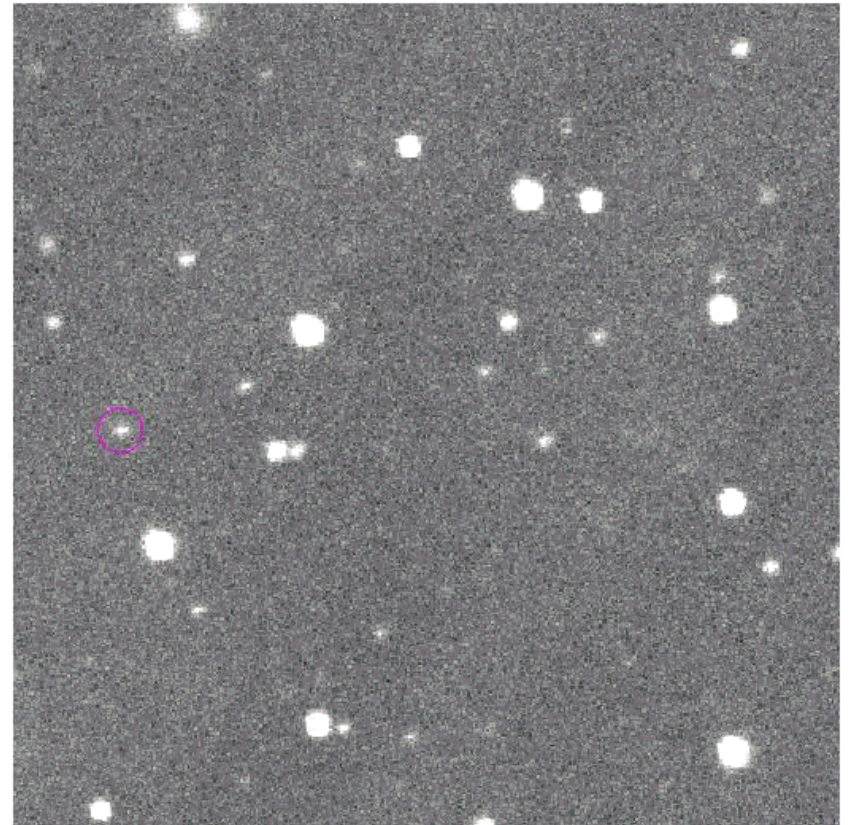


Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Discovery: images

06:39 UT on 6th October 2008 by
Richard Kowalski, 1.5-m reflector,
Mt. Lemmon Survey, Santa
Catalina Mountains, Tucson,
Arizona, United States.



<http://minorplanetcenter.org/mpec/K08/K08T50.html>

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

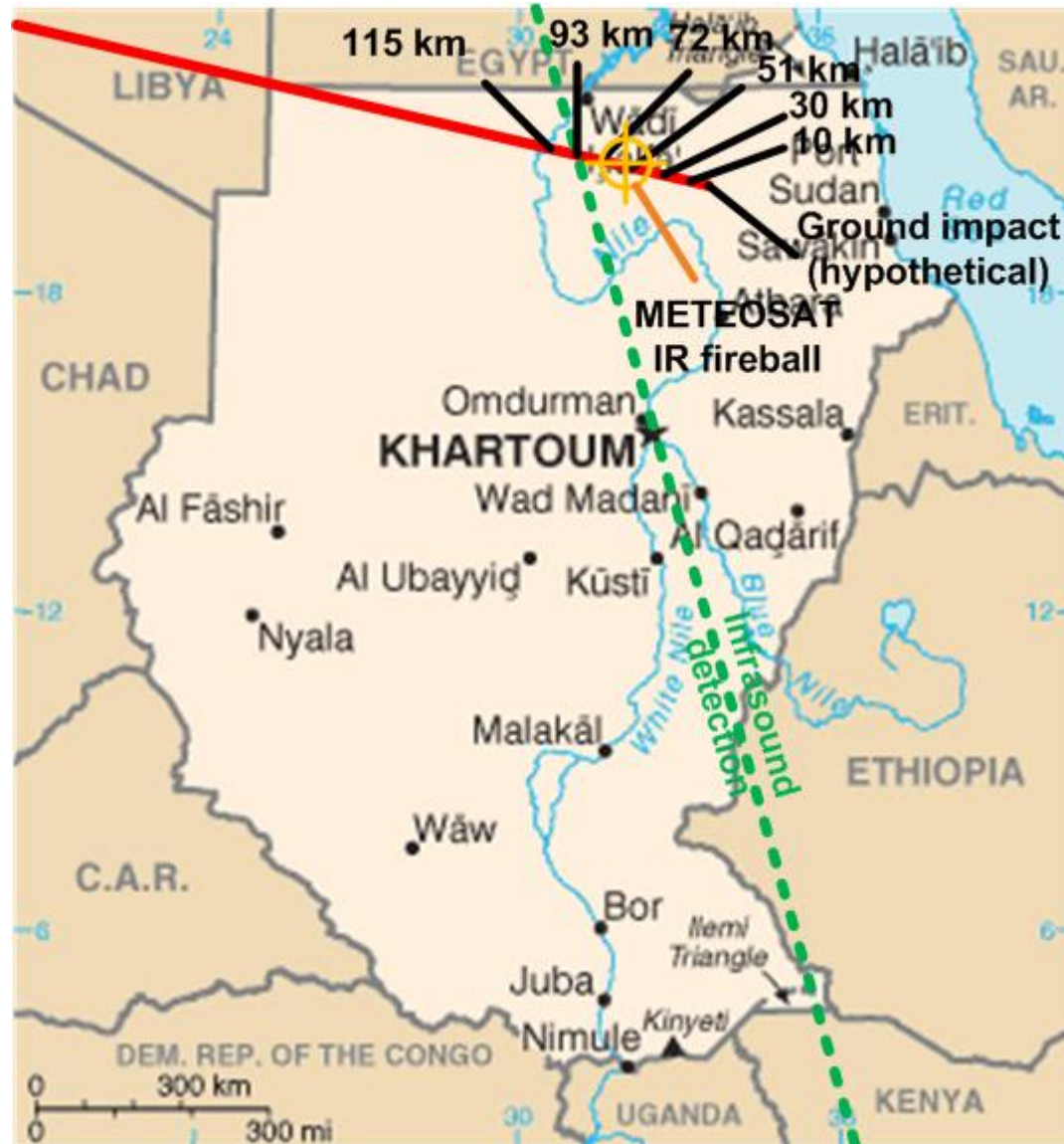
Discovery: date and time

The nominal orbit given above has 2008 TC3 coming to within one earth radius around Oct. 7.1. The absolute magnitude indicates that the object will not survive passage through the atmosphere.

Steve Chesley (JPL) reports that atmospheric entry will occur on 7th Oct 2008 at 02:46 UTC over northern Sudan. Note the reported time here is precise to the minute, not the second...

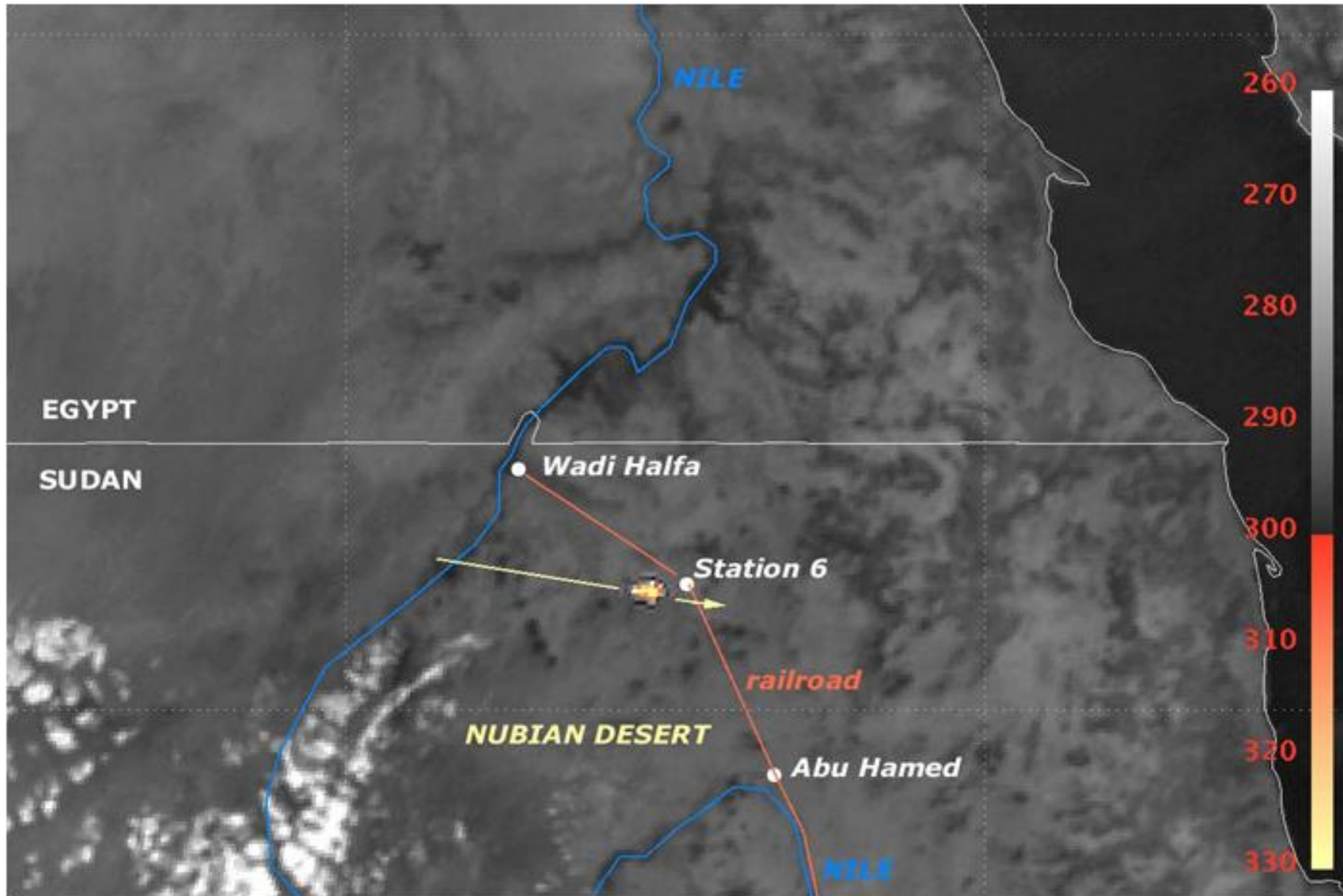
Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

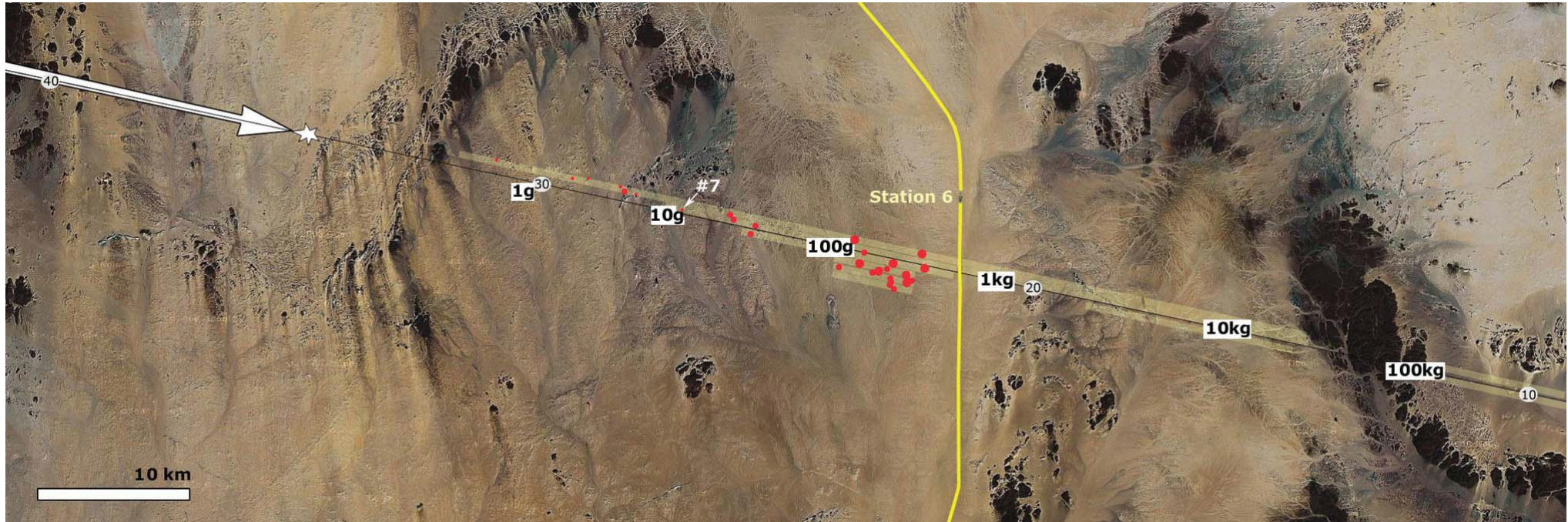


Figure 1 | Map of the Nubian Desert of northern Sudan with the groundprojected approach path of the asteroid and the location of the recovered meteorites.

The impact and recovery of asteroid 2008 TC3, Vol 458|26 March 2009| doi:10.1038/nature07920

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan








Jacob Kuiper on duty at nightshift Oct 6th-7th 2008 in the weatherroom of the Royal Netherlands Meteorological Institute



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

First alert-emails: Area: NE- Sudan. Note: this is on 6 october 2008 at 21:13!

	Chris Steyaert	Re: [VVS] asteroide stort op aarde neer	ma 6-10-2008 21:42
	Thierry Pauwels	Re: [VVS] asteroide stort op aarde neer	ma 6-10-2008 21:58
	Thierry Pauwels	[VVS] [Fwd: Re: [PLANOCULT] VERY URGENT : Earth MOID = 0.0000 !]	ma 6-10-2008 22:08
	SpaceWeather.com	Small asteroid might hit Earth's atmosphere tonight	ma 6-10-2008 22:18
	Marco Langbroek	Re: [VVS] asteroide stort op aarde neer	ma 6-10-2008 22:41
	Lode Stevens	[VVS] Astroide in beeld bij SLOOH	ma 6-10-2008 23:42
	Lode Stevens	[VVS] Astroide in beeld bij SLOOH	ma 6-10-2008 23:42

Van: Vereniging voor Sterrenkunde (Belgian Association of Amateur Astronomers) **Aan:** VVS@LISTSERV.CC.KULEUVEN.AC.BE
Onderwerp: Re: [VVS] asteroide stort op aarde neer **CC:**

Thierry Pauwels schreef:

Wel komt het tijdstip

> van impact binnen 1 minuut overeen met het aangekondigde en ik krijg voor de
> plaats van impact 33.1 graden oosterlengte, 20.5 graden noorderbreedte (Ligt
> dat inderdaad in Soedan ?)

Dat is om en nabij de grens Soedan-Egypte, nabij Wadi Halfa.

- Marco

Dr Marco (183294) Langbroek
Dutch Meteor Society (DMS)

DMS website: <http://www.dmsweb.org>

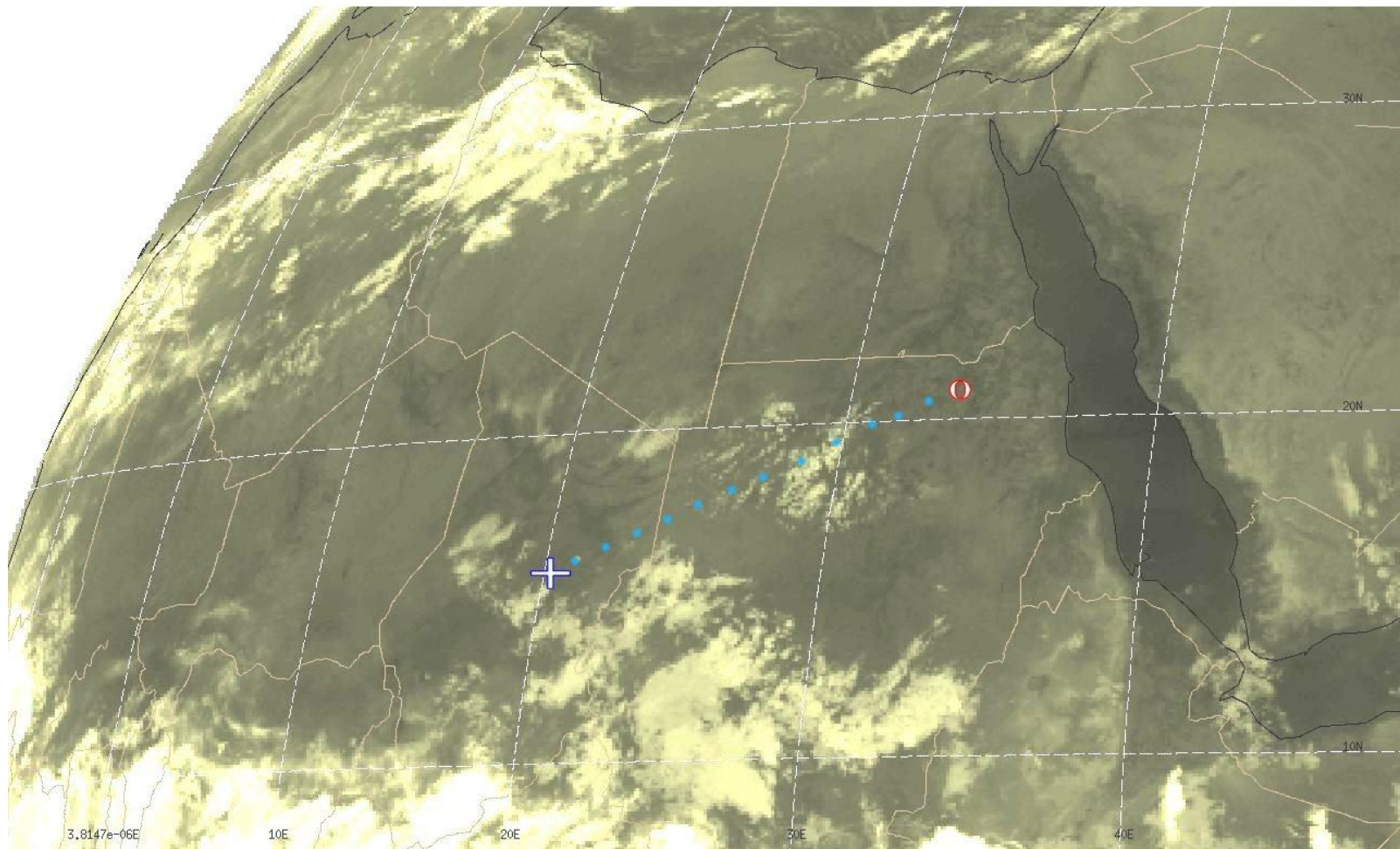
private website: <http://www.marcolangbroek.nl>

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

IR-image cloud situation above NE Africa at 03:00 UTC

METEOSAT7 GLOBE IR Tue 07 Oct 2008 0300z



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

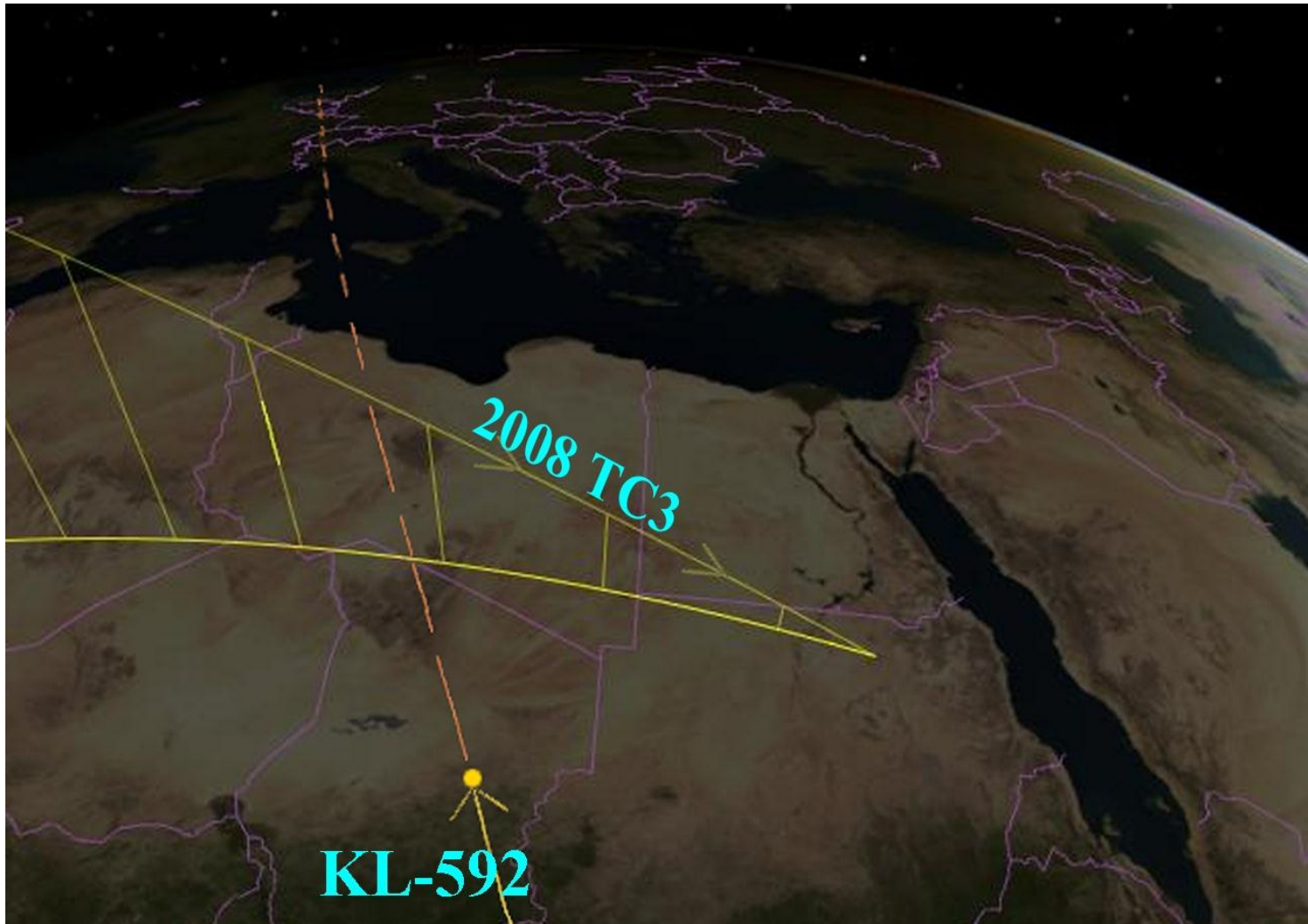
KLM Boeing 747 some 1500 km southwest of entry-point



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Eyewitness in the sky KLM airliner from Johannesburg-Amsterdam



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Captain Ron de Poorter (left) and co-pilot Coen van Uden (right)



Photo: NGC

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Captain Ron de Poorter explaining his flight position and observation
to meteorologist Jacob Kuiper - KNMI



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

The observation of the KLM pilots

KLM-592 observation:

- observers: captain De Poorter, co-pilot Van Uden
- position northern Chad
- height: FL350 (around 10.500 m)
- flightdirection and speed NNW, 498 kts (922km/hr)

At 0245 UTC +40 sec:

- = 2 - 3 times lighting of the atmosphere at NNE horizon (De Poorter 1.5 sec, Van Uden 4-5 sec).
- = along a width of 10 degrees and a height of 5 degrees above the horizon (van Uden 20 and 10 degr).
- = Colors yellow and red.

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

PRESS RELEASE, UNDER EMBARGO UNTIL 2009 OCTOBER 5, 5:00 a.m. EST SETI

Institute contact: [contains video of tumbling asteroid]

Karen Randall

1-650-960-4537

krandall@seti.org

SCIENCE SLEUTHS RELEASE A COMPOSITE SCETCH OF ASTEROID 2008 TC3

Special topical session at the AAS/DPS meeting in Puerto Rico:

" From the Heavens to the Earth: The 2008 TC3 / Almahata Sitta Ureilite Fall".

The asteroid that crashed in northern Sudan last year was shaped like a loaf of walnut-raisin bread, according to astronomer Peter Scheirich and colleagues at Ondrejov Observatory and Charles University in the Czech Republic.

Scheirich will report his findings at the Division for Planetary Sciences of the American Astronomical Society meeting in Puerto Rico, which on October 5 has dedicated a special session to this asteroid.

The small asteroid, called "2008 TC3", was the first to have been spotted in space before hitting Earth.

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Meteorday VVS, DMS, WGN at 31/10/2009 and Peter Jenniskens of NASA-Ames presenting the recovery of Asteroid 2008 TC3



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Meteorday VVS, DMS, WGN at 31/10/2009 : the break up trajectory of Asteroid 2008 TC3 and the effects of higher winds – above northern Sudan...



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Meteorday VVS, DMS, WGN at 31/10/2009 : Peter showing a piece of Asteroid 2008 TC3 to the highly interested meteorobservers...



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Presentations by amateurs at the Workshop

Jacob Kuiper, Dutch Meteorological Institute, the Netherlands

* Atmospheric entry of 2008 TC3 observed by KLM airliner and by METEOSAT satellites

Luc Bastiaens, Observatory of Antwerp Urania, Antwerp, Belgium

* Centralized gathering of fireball information from the general public in an international context

Klaas Jobse, Dutch Meteor Society, Oostkapelle, the Netherlands

* The January 17, 2009, fireball and meteorite recovery in Lolland, Denmark

Carl Johannink, Dutch Meteor Society, Gronau, Germany

* Impact and attempted recovery of the October 13, 2009, fireball over Groningen

Casper ter Kuile, Dutch Meteor Society, the Netherlands

* Fireball observations from the Netherlands

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

بسم الله الرحمن الرحيم

University of Khartoum
Faculty of Science
Department of Physics
P. O. Box 321 Khartoum 11115
Tel: +249 11 780539
Fax: +249 11 780539



جامعة الخرطوم
كلية العلوم - قسم الفيزياء
ص. ب: 321 الخرطوم 1115
تلفون: +249 11 780539
فاكس: +249 11 780539

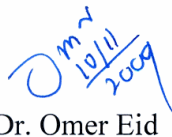
Date: 10\11\2009

Jacob Kuiper
Netherlands
Email: jacobkuiper@solcon.nl

Dear Prof. Jacob Kuiper,

The Physics Dept., Faculty of Science University of Khartoum, would like to invite you to Sudan to join its workshop for Asteroid 2008 TC3 on the 6th and 7th of Dec. 2009, and its mission to the impact area of Almahata Sitta meteorite from the 8th to 14th of Dec. 2009 in Nahr Elneel and Northern states.

Best regards.

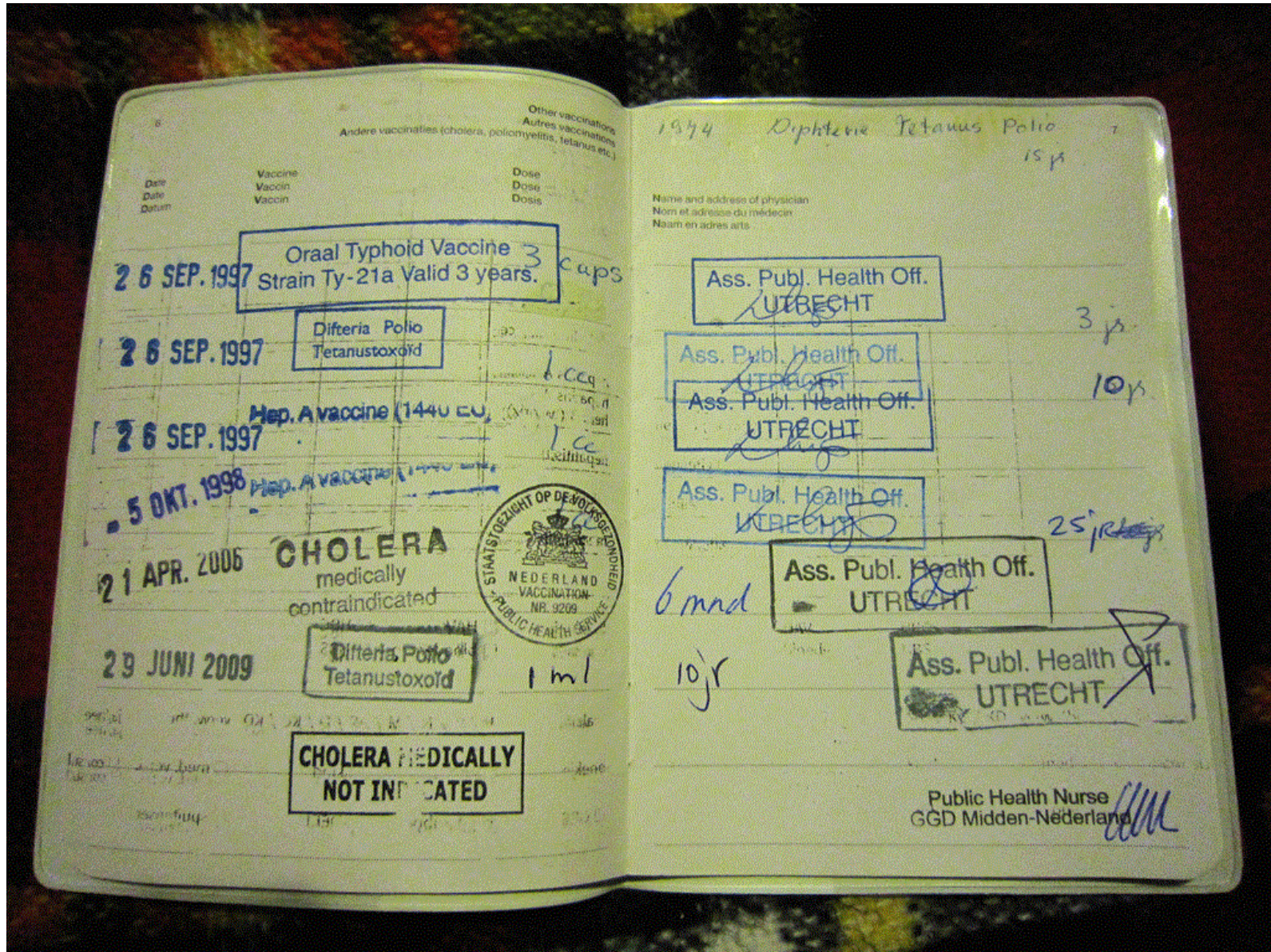

Dr. Omer Eid

Head, Physics Dept.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Dec 05 - Arrival in Khartoum

Dec 06 - Workshop at University of Khartoum

Dec 07 - Workshop at University of Khartoum

Dec 08 - Travel to Almahata Sitta

Dec 09 - Field survey

Dec 10 - Field survey

Dec 11 - Field survey

Dec 12 - Field survey

Dec 13 - Sight seeing along Nile, Kerma: Wadi Halfa - Karima

Dec 14 - Sight seeing Holy Mountain, Nuri Pyramids, Pertified Forest: Karima - Karima

Dec 15 - Sight seeing Meroe: Karima - Khartoum, back in late afternoon, Nile boat tour

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Arrival of the participants at Khartoum international airport



Asteroid 2008 TC3

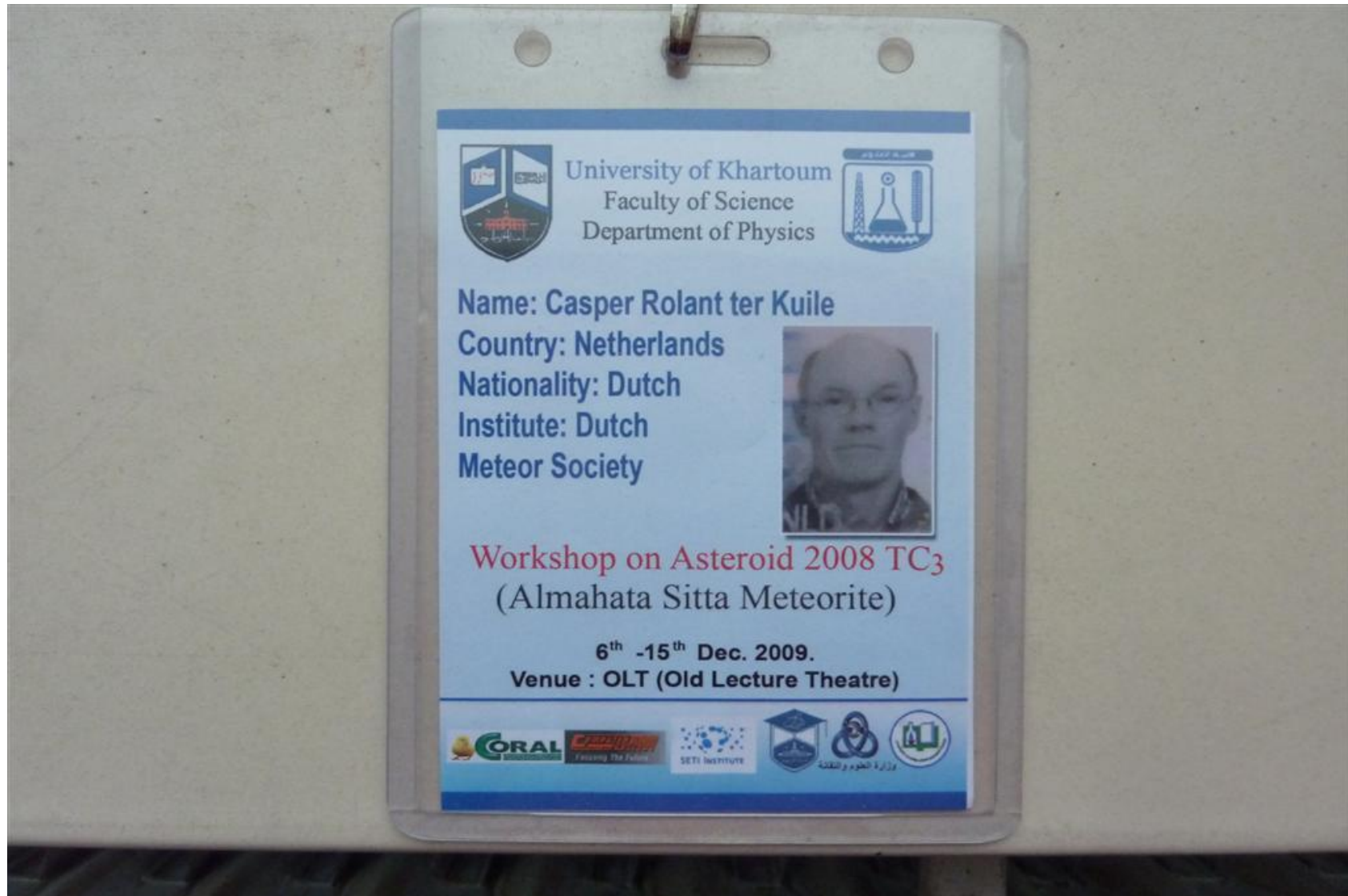
Almahata Sitta, Nubian desert, Sudan

Some participants are in the western-like Acropole hotel, others are in the Guesthouse of the University of Khartoum



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Workshop on Asteroid 2008 TC3 at the University consisting of oral presentations and poster presentations



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Welcome ceremony. From left to right are: the dean of the university, Dr. Omer Eid, Dr. Muawia Shaddad and Dr. Peter Jenniskens



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Local organisation by the University of Khartoum

- Muawia H. Shaddad, LOC chair, Physics Department, Faculty of Sciences, University of Khartoum.
- Omer Eid, Head of the Physics Department, Faculty of Sciences, University of Khartoum.
- Sumaia Abu Kashawa, Dean of the Faculty of Sciences, University of Khartoum.
- Saadia Elsir, Juba University, Khartoum.
- Peter Jenniskens, SOC chair, SETI Institute, 515 N. Whisman Road, Mountain View, CA 94043, USA.

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

The lecture hall of the University of Khartoum. At the back many students which would help us in recovering lots of meteorites of Asteroid 2008 TC3



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Posterpresentation outside of the lecture hall.

P-01: Luc Bastiaens, Observatory of Antwerp Urania, Antwerp, Belgium

* Centralized gathering of fireball information from the general public in an international context

P-02: Jakub Haloda, Czech Geological Survey, Prague, Czech Republic

* Physical properties of meteorites

P-03: Klaas Jobse, Dutch Meteor Society, Oostkapelle, the Netherlands

* The January 17, 2009, fireball and meteorite recovery in Lolland, Denmark

P-04: Carl Johannink, Dutch Meteor Society, Gronau, Germany

* Impact and attempted recovery of the October 13, 2009, fireball over Groningen

P-05: Casper ter Kuile, Dutch Meteor Society, the Netherlands

* Fireball observations from the Netherlands

P-06: Shahinaz Yousef, Cairo University, Giza, Egypt

* On the possibility of formation of nanodiamonds in Ureilites by shock waves generated by the explosion of the meteor within the Earth's atmosphere

P-07: Francois Colas, IMCCE, Paris, France

* Meteor Network in France for high accuracy orbits

P-08: Kees Welten, UC Berkeley, CA, USA

* The cosmic ray exposure history and pre-atmospheric mass of Almahata Sitta

P-09: Stefanie Milam, NASA Ames Research Center, CA, USA

* Mid-Infrared transmission spectrum of the Almahata Sitta meteorite

P-10: Viktor Hoffmann, IFG/Univ. Tuebingen, Germany

* Magnetic signatures of the Almahata Sitta meteorites

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Posterpresentation outside of the lecture hall. Carl, Luc, Klaas and Casper all had to present their own poster. Jacob presented the KLM observation of Asteroid 2008 TC3.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Workshop on Asteroid 2008 TC3 – first day, morning session:
Impact and recovery of asteroid 2008 TC3

- Muawia H. Shaddad, University of Khartoum, Sudan
The recovery of Almahata Sitta
- Steve Chesley, Jet Propulsion Laboratory, Pasadena, USA
Impact Trajectory of Asteroid 2008 TC3 [presented by Peter Jenniskens]
- Petr Scheirich, Astronomical Institute, Ondrejov, Czech Republic
Shape and rotation of 2008 TC3
- Jacob Kuiper, Dutch Meteorological Institute, the Netherlands
Atmospheric entry of 2008 TC3 observed by KLM airliner and by METEOSAT satellites

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Group picture of scientists and university staff involved and some students of the physics department of Dr. Muawia Shaddad



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Workshop on Asteroid 2008 TC3 – first day, afternoon session:
The nature of Ureilites: New results from Almahata Sitta

- Michael Zolensky, NASA Johnson Space Center, USA
Mineralogy and petrography of Almahata Sitta [given by telecon]
- Jason Herrin, NASA Johnson Space Center, Houston, USA
Thermal history of Almahata Sitta
- Doug Rumble, Geophysical Laboratory, Carnegie Inst. of Washington, Washington DC, USA
Oxygen Isotope Composition of Almahata Sitta [presented by Jason Herrin]
- Danny Glavin, NASA Goddard Space Flight Center, Maryland, USA
Extraterrestrial Amino Acids in the Almahata Sitta Meteorite [given by telecon]
- Abbasher Mahmoud Gismelseed, Muscat, Oman
A Mossbauer study of Fe-bearing phases in Almahata Sitta meteorite [given by]
- Tomas Kohout, Department of Physics, University of Helsinki, Finland
Physical properties of the TC3 asteroid/Almahata Sitta meteorite

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

One of the presentations at the workshop : Petr Scheirich, Astronomical Institute, Ondrejov, Czech Republic - Shape and rotation of 2008 TC3



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

At the end of the first day we were invited for a banquet at the home of Dean Sumaia Abu Kashawa. A groups of local women preforming tradition Sudanese music.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Workshop on Asteroid 2008 TC3 – second day, morning session:
The nature of the Ureilite parent body

- H. Uwe Keller, Max Planck Institut fuer Aeronomie, Katlenburg-Lindau, Germany
2008 TC3, meteorites, and comet Halley
- Amy Morrow, Stanford University, USA
Detection of Aromatic Organic Species in 2008 TC3 by Two-Step Laser Mass Spectrometry
- Stefan Loehle, Institut fuer Raumfahrtsysteme, Stuttgart, Germany
Characterization of thermo-physical Properties using ground testing facilities
- Carla Taricco, University of Torino and Istituto di Fisica dello Spazio Interplanetario (IFSI, INAF), Torino, Italy [presented by Peter Jenniskens]
Cosmogenic radioisotopes in Almahata Sitta meteorite
- Tehani Shatir, University of Khartoum, Sudan
Reflection spectroscopy of Almahata Sitta
- M. Huntley, J. Reed, and G. Hodges, TV6, UK
Documentary 'Countdown to Impact' (Naked Science, National Geographic)

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

At the physics laboratory of Dr. Shaddad: the Czech scientists measuring the electromagnetic characteristics of the meteorites.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Workshop on Asteroid 2008 TC3 – second day, afternoon session:
Search for the ureilite parent body in the asteroid belt

- Saadia Elsir, Juba University, Khartoum, Sudan
XRF analysis of asteroid 2008 TC3
- Paul Chodas, NASA JPL, California
Orbit propagation of 2008 TC3: Recent and distant past [given by Peter Jenniskens]
- Jeremie Vaubaillon, IMCCE, Paris, France
The dynamics of 2008 TC3 [given by Francois Colas]
- Mark Hammergren, Adler Planetarium and Astronomy Museum, Chicago, USA
Prospects for Identifying Ureilite Parent Bodies; Polymict Ureilites: Insights Into the Ureilite Parent Body
- Peter Jenniskens, SETI Institute, Mountain View, USA
Searching for the Ureilite Parent Body: origin of 2008 TC3 in the asteroid belt
- Prof. Lucy McFadden, University of Maryland, USA
Searching for Meteorites in Antarctica

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Lunch and breaks are in luxury tents in the garden of the University



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Field Survey at
Almahata Sitta
(station 6)



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Participants from western countries taking part at the field survey

- Peter Jenniskens, SETI Institute, Mountain View, USA
- Petr Scheirich, Astronomical Institute, Ondrejov, Czech Republic
- Jacob Kuiper, Dutch Meteorological Institute, the Netherlands
- Jason Herrin, NASA Johnson Space Center, Houston, USA
- Tomas Kohout, Department of Physics, University of Helsinki, Finland
- H. Uwe Keller, Max Planck Institut fuer Aeronomie, Katlenburg-Lindau, Germany
- Amy Morrow, Stanford University, USA
- Stefan Loehle, Institut fuer Raumfahrtsysteme, Stuttgart, Germany
- Mark Hammergren, Adler Planetarium and Astronomy Museum, Chicago, USA
- Prof. Lucy McFadden, University of Maryland, USA
- Jakub Haloda, Czech Geological Survey, Prague, Czech Republic
- Francois Colas, IMCCE, Paris, France
- Frederique Vachier, IMCCE, Paris, France
- Luc Bastiaens, Observatory of Antwerp Urania, Antwerp, Belgium
- Klaas Jobse, Dutch Meteor Society, Oostkapelle, the Netherlands
- Carl Johannink, Dutch Meteor Society, Gronau, Germany
- Casper ter Kuile, Dutch Meteor Society, the Netherlands

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Lobby of the Acropole : very last moments to have some internetconnection to the world. In the desert there is lots of sand (and meteorites) but no...



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Heading towards the Nubian desert. But first getting everything ready to depart...



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

In the desert there is no food and water so this is our last chance to do some shopping...



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Somewhere along the road a pitchstop: having some drinks. Note it is already dark and we did not reach our destination (by far...)



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Our camp at station 6. Best place on earth to recover meteorites! ;-)



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Gathering of the scientists: Peter: you are not allowed to take any meteorite home.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Gathering of the students: practical information by the group leader.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Gathering of all together: scientific presentation by Dr. Muawia Shaddad.
Details on the past day and outlook for tomorrows recovery operations.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Best skies you have ever seen: the Milky Way and Zodiacal light are disturbing!
No interference from artificial light at all!



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Social (or scientific?) talks among scientists. Dr. Peter Jenniskens at right.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

In the bus to the site. Our Sudanese students are as happy as can be! It was really enjoying to be among these guys!



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Stuck in the Nubian sand. No problem to get the bus rolling again.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

We were split up into groups of 8 persons. Distance between persons is 20 meters. So we were on a straight line of approximately at least 1 kilometer width.



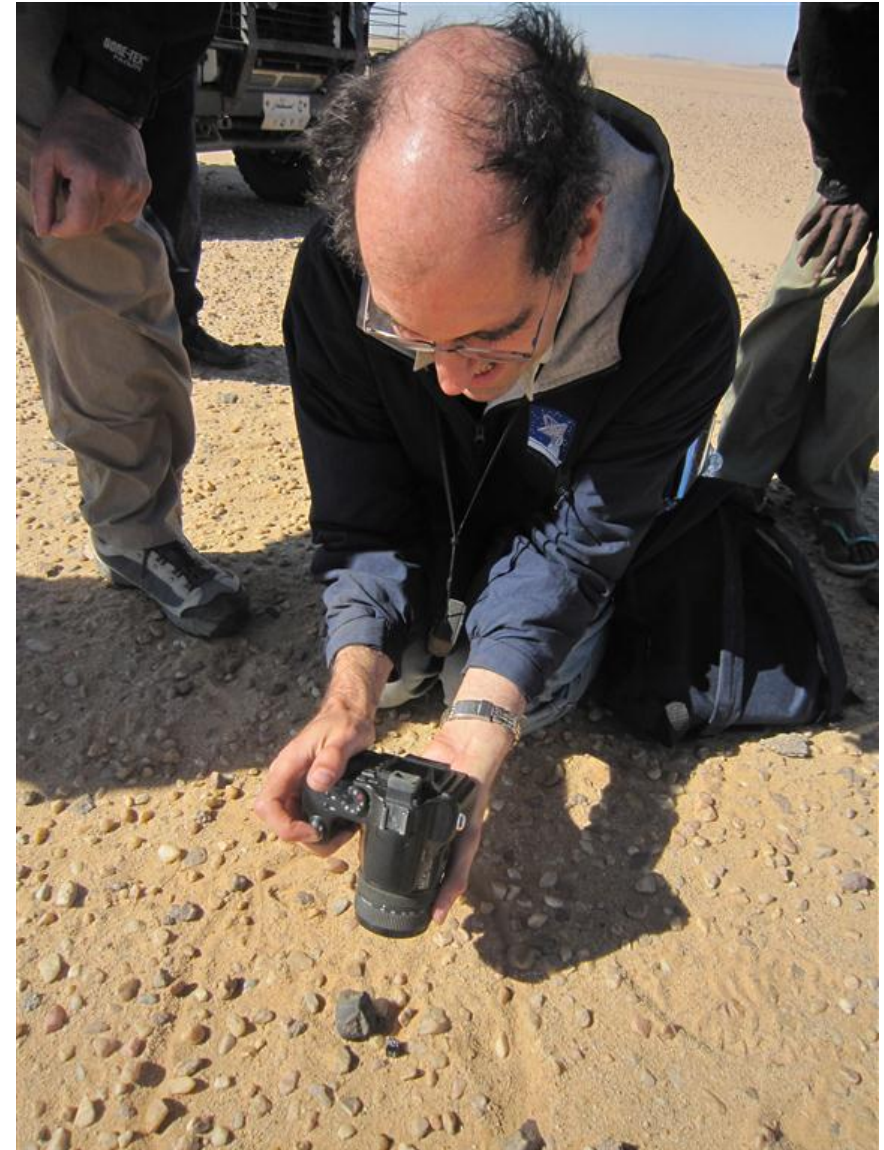
Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Note the desert is made of yellow sand. The meteorites are very dark / black. So finding them is no difficult task here. This one is approximately 2 centimeters.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Traditional Sudanese lunch
in the desert.

A group of 8 persons
having lunch together from
one dish.

And with bare hands.

But remind using only your
right hand!



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

The students like to make group pictures together with the western people. For them it is perhaps an even more “once in a lifetime” event!



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Structures along the railroad near station 6 appear black against the twilight. It is kind of a dream to be at a place like this...



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Ruin structures in the very first rays of sunlight...



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

“Official” grouppicture of students and scientists



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Dec 13 - Sight seeing along Nile, Kerma: Wadi Halfa - Karima

Dec 14 - Sight seeing Holy Mountain, Nuri Pyramids, Pertified Forest: Karima - Karima

Dec 15 - Sight seeing Meroe: Karima - Khartoum, back in late afternoon, Nile boat tour

Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Wadi Halfa, Lake Nubia at the Egypt – Sudanese border. From left to right are:
Jacob, Luc, Carl, Casper, Klaas



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Mosque with minaret somewhere along the road.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

The Czech scientists still measuring meteorites. About 250 meteorites are recovered in 3,5 days of searching in the Nubian desert.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Traditional Sudanese food. Lucky we like lots of foreign food!



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

The Dutch gang of four ;-)) From left to right are: Casper, Jacob, Klaas and Carl.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Sudan is full of ancient history! Lots of sites have still to be excavated. This site is along the river Nile.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Pyramids not only are in Egypt but in Sudan as well! Most of them are located along the river Nile. This one belongs to the Nuri Pyramids.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

The discovery of an ancient Sudanese pharaoh ;-)



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Explaining hieroglyphs in a Sudanese tomb along the Nile.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Groupphoto on the boat on the river Nile.



Asteroid 2008 TC3

Almahata Sitta, Nubian desert, Sudan

Further reading material:

- http://en.wikipedia.org/wiki/2008_TC3
- <http://www.seti.org/feature/asteroid-2008-tc3-revealed>
- <http://minorplanetcenter.org/mpec/K08/K08T50.html>
- <http://asima.seti.org/2008TC3/nature07920.pdf>
- <http://asima.seti.org/2008TC3/>
- <http://asima.seti.org/2008TC3/workshop2008TC3.html>
- <http://www.wondersofnature.nl/meteors/asteroid-2008-TC3-en.html>