International Solar Eclipse Conference

A crossroad on physics and eclipses of the sun

Lecture

David Berghmans, Belgium

Solar/Space weather activities in Belgium

As we are approaching the maximum of the current solar cycle, the effect of the enhanced solar activity on present day technolgy becomes increasingly important. Major X-ray flares and proton events can endanger the health of astronautes and satellites.
Impacts of coronal mass ejections on the magnetosphere of the earth lead to geomagnetic storms whose effects range from power grid and radio communication anomalies to beautiful auroras. Although "Space Weather" research is still in its infancy, its obvious relevance for society and its interdisciplinary nature makes this a very exciting and booming new branch of science. In this presentation I will give special attention to the solar drivers of Space Weather and to ongoing/planned Space Weather activities in Belgium.
Meanwhile, daily space weather forecasts as well as weekly and monthly review reports can be obtained at the "Solar Influences Data Center" (SIDC, Brussels): http://sidc.oma.be

Lecture

Juan Carlos Casado, Spain

Eclipse Photography and Eclipse Chasing

Introduction
Reasons
Objectives
Biography
The trip
Characteristics
Types
The photography
The ASTROphotographic process
Object-atmosphere
Telescope-camera
Film-process
Picture type
The results
Travel to total eclipses of Sun 1988, 1991, 1994, 1998 and 1999
Conclusions

Lecture

Frederic Clette, Royal Observatory Belgium

TECONET and the Belgian coronal polarimetric campaigns

The Trans-European Coronal Observing Network (TECONet) successfully acquired polarimetric images of the corona during the August 11, 1999 total solar

eclipse, on many different sites distributed along the totality band, from France to Iran. 15 stations (out of a total of 28), run by a mix of amateur and professional astronomers, collected photographic or CCD images using a common observing technique, over a duration of about 1h 30min. We present here a summary of this unique international eclipse campaign, which relied on the heritage of many earlier Belgian eclipse expeditions. The huge data processing work already lead to the determination of global electron density distributions up to 2.5 solar radii. Some unique features of this active-type corona will be emphasized, and we will also introduce the ongoing cross-analysis work with space-based data from the EIT and LASCO imagers on the SoHO mission.

Lecture

Daniel Fischer, Im Kottsiefen 10, 53639 Koenigswinter, Germany, www.astro.uni-bonn.de/~dfischer

Imaging eclipses - an 18-year quest for the best, most lightweight and cheapest approach

What is the best compromise of image quality, transportability and price of equipment one can bring to an eclipse track? The author has tried various 'systems', from an old telephoto lens with two tele extenders on a tripod to a Russian Maksutov system on a small equatorial mount, on various occasions since the 1983 eclipse: In this talk I will document the slow but steady progress made and show what I consider the optimum combination of optics and mount. Now the quest is on for the perfect detector: Will the current progress in affordable megapixel CCD soon outperform chemical film - perhaps as early as in 2001?

Lecture

Bernard H. Foing, ESA Space Science Department, ESA Eclipse99 Co-Chairman and Coordinator, Bfoing@estec.esa.nl

Black Sun Highlights: Summary of ESA Eclipse99 Activities

The 11 August total solar eclipse was a unique opportunity to communicate and share our interest for space with the public. Scientists and engineers from ESA's Space Science Department had prepared a range of activities culminating with dedicated eclipse events in Europe. "The experience, the emotions and the memories have been overwhelming, both for those that had clear and those that had cloudy skies. More than 300 million Europeans became eclipse viewers or chasers, and turned into amateur scientists".

From the Atlantic, the UK, Paris, Noyon, Thionville, Strasbourg, Stuttgart, Munich, Hungary and Bucarest, several ESA staff have filmed animated events or captured images to be shared with the European public. Here we give some highlights from these Eclipse99 events in Europe.

The Atlantic: the jetplane expedition by the Irish ESA astronomer Leo Metcalfe and his crew to the eclipse shadow from Ireland was successful and very exciting

Noyon, France: a large event took place with some 8000 amateur astronomers and general public in the official eclipse viewing site with participation of 380 staff from ESA ESTEC and Paris, and 40,000 people in the city of Noyon. Images and results of SOHO were shown and commented for the public and radio. This was a large PR and communication event for ESA and SOHO. More than 30 interviews were given by ESA multinational staff.

Strasbourg: The whole week of 4-11 August (16h00-18h00) a daily press conference took place at the France 3 TV auditorium, where SOHO videos, CD-ROM, latest images were presented by the Eclipse99 coordinator B.H. Foing and the SOHO Deputy Project Scientist P. Brekke. On the eclipse day, local organisers and animated a radiophonic event for more than 5000 people, giving a multimedia show including SOHO images, and eclipse broadcast on a giant projection screen.

Stuttgart: This was a large PR event for the Sun and SOHO, at the Science Fair of Stuttgart that attracted some 500,000 participants. It was, however, raining on the day of eclipse.
Munich: In the morning of 11 August, people gathered on the airfield of the "Aeroclub Dachau" close to Munich. Scientists of the Space Science Department of ESA, joined them with a setup to send images of the Sun via telephone line to ESA/ESTEC. There was a clear sky at totality and great eclipse video images were obtained.
Burgenland, Austria: a team from the Space Generation Forum experienced the longest totality over ESA member states (2mn21.5 s).
Szombathely, Hungary: at the International Youth Astronomy Camp in Vep, near Szombathely (Hungary near the Austrian border), more than 150 students had assembled since the beginning of August for lectures and experimental activities. They also prepared educational experiments for the eclipse. S. Orlando and his local collaborators also installed the SSD eclipse science experiments which were previously used in total eclipses in Chile in 94 and Guadeloupe in 98.
Other media activities featuring the Sun, SOHO and space took place all over European sites undergoing only partial eclipse.
Paris: a press conference took place daily at the Museum of Natural History from 6 to12 August, with participation from ESA by R.M. Bonnet, B.H. Foing and P.Brekke as well as of scientists from the SOHO MEDOC center. Some of the ESA Eclipse99 European results have been presented at the press conference in Paris on 12 August, and broadcast on several European TVs.
Turin, Italy: Eclipse99 committee member Ester Antonucci reports an event in Turin, with TV coverage on the 3rd national channel. The initiative was an overwhelming success: 6000 people turned up at the Turin event and the TV live broadcasting on the eclipse got 41% of the national share, with a peak audience of 6 million people.
At ESTEC, a public event was organised at Noordwijk Space Expo for more than 1600 people, ESA staff and general public. Also from ESTEC was coordinated the installation of the cameras and data acquisition and transmission system from ESTEC in the six different sites, simultaneously. The images captured from the different sites were transmitted to BBC and were shown live on the BBC web.
Selected images from the eclipse sites can be found on and unloaded from the ESA Solar System Division server http://solarsystem.estec.esa.nl/ and the ESA Science Communication web http://sci.esa.int/
A 30mn video was also realised on “Black Sun Highlights”, available on request to the author.
We want to thank all those that have helped us at ESA SSD to organise these Eclipse99 activities.
Links ESA Eclipse 99 resources: http://sci.esa.int/structure/content/index.cfm?aid=5&cid=94

Lecture

John Hopper, JohnLX200@aol.com, http://www.mapug.com, USA

Eclipses From the Air

Airborne eclipse viewing has yet to gain such mainstream acceptance as from land or sea. However, it has been used with success several times by various individuals and groups, and is poised to become a mainstream alternative, particularly for eclipses with poor accessibility from population centers.
A brief history of eclipse flights will be presented.
Eclipse flight planning will be discussed, with emphasis on the differences from land or sea expeditions. This will include eclipse selection, location selection, flight strategies, aircraft selection, photography, communications, and general tips for organizing a successful flight.

Upcoming eclipses will be briefly examined as to their suitability for airborne viewing. While all total solar eclipses have good aerial viewing geometry at sunrise and sunset, often including options to extend totality, not all eclipses have geometry suitable for a mid-day chase to extend totality the maximum amount without sacrificing viewing angle.
Results and lessons from the author's sunrise "USA Eclipse Flight 1999" will be presented, including digital photos which were posted online before the eclipse reached land...or more precisely, clouds over land.
Outline of presentation:
Land, Sea or Air?
  Comparison of experiences, costs, probabilities of success
Sunrise, Sunset, or "Chase" near maximum?
  Effect on geometry, viewing angles, flight planning
  Airplane window limitations
Flight Path Planning
  Viewing angle
  Aircraft selection
    Cost
    Performance, range, weather avoidance, etc.
    Speed: good or bad?
Navigation and timing
Eclipse Flight 1999
   Plan vs. reality
   Results, photos, video clips
Future possibilities for 2001 and beyond

Lecture

Peter C Kalebwe, Physics Department, University of Zambia, P O Box 32379, Lusaka, Zambia. E- mail:pkalebwe@natsci.unza.zm, Fax: 260-1-253952

The 2001 Total Solar Eclipse Over Zambia: Local Plan of Action

Total solar Eclipse expeditions for both scientific and touristic reasons have gained ground in recent years. This is largely due to the fact that solar eclipses still offer unique opportunities for exploring the solar corona because of the suppressed background photospheric emission(1). However, an increasing number of people chase the shadow just for the fun of it and for new experiences. This group of people finds the total eclipse of the Sun highly exciting and profoundly moving(2).
The first total solar eclipse of the Third Millenium takes place on the afternoon of Thursday the 21st day of June, 2001. It begins in the South Atlantic about 400 kilometers southeast of Uruguay(3). Over the African continental landmass, the Moon's shadow passes over Angola, Zambia, Zimbabwe, Mozambique and Madagascar. Of the five countries lying under totality, Zambia is bound to attract more visitors since it is the only country to have its capital city, Lusaka, lying under totality. Another factor qualifying Zambia as the primary destination is the relative peace that the nation has enjoyed since independence in 1964(4).
This paper discusses the plans that are being effected to attract as many visitors as possible to view the eclipse on Zambian soil on one hand and to ensure that the event is a success on the other. In addition, the paper discusses the scientific links and collaboration that the Physics department of the University of Zambia is likely to enter into before, during and after the eclipse. The Eclipse Coordination Committee's proposal to take advantage of the excitement generated by the eclipse to solicit for training in astronomical sciences is also discussed.
References

* S.R. Habbal, The Total Solar Eclipse of 1999: Opportunities for collaboration. Proceedings of the Space Science Conference, 13-17 March, malfraq, Jordan
* Fred Espenak, Ken Willcox and Mark Littlemann; Totality: Eclipses of the Sun
Fred Espenak and Jay Anderson; The Total Solar Eclipse of 2001 June 21, a NASA publication. Website http://www.solipse.com

Lecture

Jean marc Lariviere, Canada

SHADOW CHASERS

Truly spectacular phenomena, total eclipses of the Sun have always enthralled Humanity. For some, the fascination borders on obsession. What makes these eclipse chasers travel to the four corners of the Earth? SHADOW CHASERS follows four of them who have come to observe the last total solar eclipse of the millennium, which on August 11, 1999, streaked across Europe all the way to the Orient.

They make their way all along the path of totality for this historical meeting. Alain Cirou, a scientific writer and commentator will be describing the eclipse live on, of all things, French radio from the North of France.

Paul Houde is a popular Canadian radio and television personality from Quebec known mostly for his humour and imitations. A veteran of seven previous eclipses he travels to Austria to share this rare event with his father and his twelve year old son.

Olivier Staiger is a limousine driver from Geneva, Switzerland. In 1994, he saw his first eclipse by happenstance. He hasn't missed one since and spends most of his savings and free time travelling the world to broadcast eclipses and other astronomical events live on the Internet. He joins a Japanese group in Stuttgart for this Webcast.

In North-Eastern India, Debasis Sakar, accompanied by his wife, two year old son and four friends, has travelled 4 000 kilometres in difficult conditions so that his son may witness his first total solar eclipse.

Unfortunately, being in the path of totality does not guarantee one will see the spectacle for despite the technological advancements, eclipse chasers remain vulnerable to an elementary factor : the weather. Of Alain, Paul, Olivier and Debasis, who will have their efforts rewarded?

As the moment approaches emotions are at a fever's pitch. Finally, overwhelmed, almost in a trance, some will experience the awe of the Dark Sun. Others are not so lucky as the clouds do not part and their hopes are dashed. Tears well up and yet they speak already of the next time.

From the captivating and sometime terrifying legends and myth from ancient civilizations and religions to the quests of Alain, Paul, Olivier and Debasis, a single converging point : a search for unmediated spirituality. A poetic meditation rather than a factual documentary, the film evokes through an impressionistic approach, the links that unite Humanity before the Absolute, when one's entire being becomes a fine film on which much more than the shadow of the Moon leaves its mark.

Lecture

David Makepiece, Canada

Hooked On The Shadow, a film by David Makepiece

Hooked On The Shadow is a startling new documentary that examines the profound experience of witnessing a total solar eclipse, and introduces us to the world of eclipse chasing - one of the most obsessive sub-cultures of our time.

Meet the eclipse chasers - a fanatical group of converts whose lives have been forever changed by what they see in the sky. Discover why nature's most deeply-

moving spectacle drives thousands to some of the most remote regions of the Earth.
From the Caribbean Islands to the deserts of ancient Babylonia, Hooked On The Shadow takes us inside the shadow of the Moon to explore the natural phenomenon that has driven science to the edge of its understanding and fed our dreams of the divine.
Produced in association with Space: The Imagination Station by Toronto filmmaker David Makepeace, this 24 minute film is the first documentary for television to capture chasers at both the 1998 and 1999 solar eclipses, and features images from award-winning eclipse photographer Andreas Gada, and a stirring original score by the young Toronto composer Mike Alonzo. In addition, Hooked On The Shadow won the Bronze Award for Science & Research Documentary at the Houston International Film Festival in April 2000.
Photographed and Directed by DAVID MAKEPEACE, Produced by JON LINK, DAVID MAKEPEACE for FIRST GENERATION REELS Hooked On The Shadow: In Pursuit of the Total Eclipse copyright 1999 First Generation Reels

Lecture

Francis Podmore, Senior Lecturer, Department of Physics, University of Zimbabwe, PO Box MP 167, Mount Pleasant, Harare, Zimbabwe

Zimbabwe – A Great Place for Astronomy and the Next Two Total Solar Eclipses

With clear skies most of the year, low levels of light and industrial pollution and location (being near the equator nights are long and twilight short most of the year, and we can see 96% pf the celestial sphere) Zimbabwe is an excellent place for astronomy. For nearly 100 years a small but dedicated and talented band of amateurs astronomers have been making hundreds of observations of occultations and variable stars, and contributed 10% of the global total reports to the International Halley Watch. The Astronomical Society of Southern Africa (Harare Center) is 25> years old and the largest telescopes (mostly ‘home-made’ in the country are owned by members. Active preparations for the next two total solar eclipses include site selection, coordination of safaris and the free distribution of information packs and over 100 000 eclipse viewers to about 6000 schools. If the economy doesn’t collapse, good government and respect for law and other return, the planes keep flying and fuel shortages end, we look forward to welcoming hundreds of eclipse watchers to a dramatic 3 minute spectacle on 21 June 2001 and about half that on 4 December 2002. If the weather cooperates!

Lecture

Voyto Rusin, Astronomical Institute, Slovak Academy of Sciences,Tatranska Lomnica, Slovakia

The Eclipse Corona: Present status and targets for the next research

Solar eclipses provide a unique opportunity to observe the solar corona and to solve many open questions in the solar coronal physics, e.g., heating of the corona, small-scale structures, dust particles, formation and distribution of coronal structures around the solar surface with respect to the photospheric activity centers, polarization, dust vaporization near the Sun, formation and spatial orientation of coronal streamers and their connection with solar wind streams, etc. The forthcoming 2001 eclipse will pass across some countries in the Southern Africa. This event will provide a good opportunity to perform observations of the corona with 'bigger and modern' equipments to obtain high-quality results.

We propose to focus scientific experiments for the following targets:
The white-light and emission corona:} the exact photometry and small-scale structure of the corona with the focal lenght of telescopes of 1 - 3 m or more; in detail, photometry around the poles and/or above active regions with the minimum focal length of 5 m; photoelectric detection of oscillations; co-ordinated observations with `smaller' telescopes, of 1 m focal length, along the umbral path (dynamics and large-scale structure), polarization in the emission coronal lines, etc.
Spectral observations:} detection~~ of short-term~~ oscillations shorter than 0.1 s) in individual spectral emission coronal lines or in the white-light corona; polarization in emission coronal lines (the Hanle effect - direction of coronal magnetic fieldlines); spectral observations with the high-scale resolution: colour of the solar corona, large-scale resolution: profiles of emission lines; the depth of absorption lines (F-corona), etc.
Moreover, the high precision of timing can help us to obtain more accurate parameters of the Moon's orbit around the Earth, to measure a diameter of the Sun. Comets, if any, should be studied in the close vicinity at the Sun.
We are of the opinion that the most important problems in the solar corona research during the 2001 eclipse will be supported by co-ordinated both the ground-based and satellite observations.

Lecture

Olivier Staiger, Olivier "Klipsi" Staiger, HIGH MOON http://eclipse.span.ch, Switzerland

Live WebCams

I will tell how I do a live webcast, with laptop PC , what softwares, video camera, frame grabber and phone line / cellphone for web access dial-in. And I will show the results of several eclipses I've webcasted.

Lecture

John Steele, Department of Physics, University of Durham, England

Eclipses in Ancient Mesopotamia

Eclipses were viewed as important celestial events in Mesopotamia. From at least the Old Babylonian period (c. 1500 BC), omens based upon the occurrence of an eclipse were formulated. In later periods, these omens became more detailed, and in addition mythical explanations of eclipses were composed. Rituals, including the infamous substitute king ritual, we performed during eclipses to negate their evil effects.
Beginning in around 750 BC, records of observations of eclipses began to be kept by the astronomers in Babylon and Nineveh. Those from Nineveh are contained in the correspondence between the king and the scholars he employed to interpret omens. However, the Babylonian records are found in texts that contain predominantly astronomical material, such as the so-called Astronomical Diaries. Around the same time, the first attempts we made to predict eclipses, with some considerable degree of success.
In this paper, I shall outline the sources for our knowledge of Mesopotamian eclipse records, their contents, and the cultural background in which they must be viewed.

Lecture

Peter Tiedt, Enterprise 2000 Project Team Natal Portland Cement (Pty) Ltd, South Africa

Tourism Opportunities in Southern Africa, The Total Solar Eclipses of 2001 June 21 & 2002 December 04

The presentation covers tourism opportunities in the countries traversed by the eclipses, detailing major cities and regions of these countries. The main tourist activities in these regions are described, listing the popular destinations usually visited by tourists. Accommodation & transport facilities by air, rail and road are examined, presenting the best alternatives for visitors. National & private parks are covered in detail, as well as natural wonders & other destinations of interest. Health and Safety Precautions are also mentioned and lastly web references are provided for those who require more detailed information.

Traverses: The eclipses traverses Angola, Zambia, Zimbabwe, Mozambique and Madagascar in 2001 and Angola, the Caprivi Strip region of Namibia (and the extreme SW tip of Zambia), and Botswana, Zimbabwe and South Africa in 2002.

Major Cities & Regions: South Africa - Johannesburg, Pretoria, Cape Town, Durban, Port Elizabeth, Nelspruit; Zimbabwe - Harare, Bulawayo, Kariba, Victoria Falls; Zambia - Lusaka, Kitwe, Livingstone; Namibia - Windhoek, Swakopmund, Tsumeb; Botswana – Gaborone, Francistown, Maun; Mozambique – Maputo, Beira

The “Big 5” and others: The “Big 5” are usually on a tourists’s list – a rough guide to these animals, plus some others usually sought are: Lion – common; Elephant – abundant; Rhinoceros - common in certain regions; Leopard - scarce and mainly nocturnal; Buffalo – abundant; Crocodile - common in rivers; Cheetah - scarce, diurnal; Wild Dog – scarce; Hippopotamus – common in rivers

Main Tourist Activities: Game lodges and game parks will be found in South Africa, Zimbabwe, Zambia, Mozambique, Botswana, Namibia, Malawi, Tanzania and Kenya. Beaches & Mountains are best visited in South Africa, Mozambique, Namibia. Historic & Anthropologic Sites of great interest will be found in South Africa and Zimbabwe. Natural Wonders are plentiful in South Africa, Zambia, Zimbabwe, Botswana and Namibia

Transport: Air transport is reliable and regular, with all major airlines represented. Excursion fares are usually available. Rail is not recommended except for tourist specific operations e.g Rovos and Blue Train. This method of getting around is slow. Road travel by car is good. Excellent roads in the south with many multilane highways. Care is needed in the North, with 4WD required in some areas – ask locally. Drive on left, cars all RHD. Bus travel by Luxury national operators (intercity lines) is OK, but care is needed with smaller operators. Avoid minibus taxis unless absolutely necessary.

Accommodation: In the cities international brand hotels are available, many other good hotels, caution in some areas – usually class of hotel is comparable to area. In rural areas standards vary greatly from adequate to superior – price is a good indicator (US$20 is low end). Lodges usually offer superior accommodation, some very upmarket (e.g. Sabi Sabi) charge in US$ - very tourist oriented. B&B establishments are very good, inexpensive and a growing segment. Most towns throughout the region will have at least one B&B, usually several. Camping & Caravanning is recommended in recognized camping areas ONLY e.g. game parks, municipal parks, nature reserves. Do not camp next to the road. Do not sleep on beaches or in city parks.

Private & Safari Parks & Lodges: Zambia: Kafue, North Luangwa, South Luangwa; Kubu Cabins; Angola: None known; South Africa: Londolozi, Sabi Sabi, Mala Mala, Timbavati; Zimbabwe: Malilangwe Group – excellent value, Mana Pools and Hwange areas; Mozambique: Marlin Lodge; Many fishing and diving lodges; Botswana: Chobe, Moremi, Chief’s Island; Namibia: Etosha Area, Windhoek area

National Parks: South Africa - Kruger National Park, Cape of Good Hope Nature Reserve, Royal Natal National Park, St Lucia Wetlands; Zimbabwe -Hwange National Park, Mana Pools National Park; Zambia - Kafue Game Reserve, North & South Luangwa National Park; Namibia - Etosha Game Reserve, Fish River Canyon Hiking Trail (5 days), Sossusvlei; Botswana - Moremi, Okavango Delta, Chobe Game Reserve.

Natural Wonders & Other Destinations : South Africa - Table Mountain, Blyde River Canyon & God's Window, Garden Route, Drakensberg Mountains; Zimbabwe - Great Zimbabwe, Victoria Falls, Eastern Highlands; Zambia - Victoria Falls; Botswana - Okavango Delta, Kalahari Desert; Namibia - Hoba Meteorite, World's Highest Sand Dunes

Health Precautions: Diseases: Malaria: See your Medical Practitioner – some mosquito strains are immune to some prophylactics. Use repellent lotions, electric fume generators and mosquito coils at night. HIV / AIDS & Hepatitus B: One phrase! – DON'T TAKE ANY CHANCES! Tropical Diseases (Yellow Fever etc.): See your medical practitioner – entry requirements for countries north of South Africa are specific and well detailed. Medical Care: A very high standard of care is available in "non government" hospitals. Expect long waits at government hospitals. Insurance advisable, even though medical costs lower than in US and Europe.

Safety Precautions: Muggings etc: Take the same precautions that you would in any big city. Conceal valuables. Walk in groups. Avoid seedy areas and dubious pubs/clubs.

Motoring: Keep car doors locked. Be wary of offering roadside assistance. No visible valuables, lock in boot/trunk. Be especially aware at traffic lights and minor rear end "collisions".

ATM & Credit Cards: Check your card before and after transaction. Be wary of machine jamming scams. Never provide your PIN to anyone, ever! Never use alone at night in inner city areas.

A major word of thanks from the African delegation to SEML members and especially "Klipsi"!!

Lecture

Felix Verbelen, Belgium

Maya Codici and solar eclipses

The Dresden Codex, one of the 4 remaining Maya books, contains some pages including eclipse data. Many authors have concluded that these pages are solar eclipse ephemeris data. It will be shown, on the basis of new evidence, that in fact those pages contain data on observed lunar eclipses. Furthermore, it will be shown that supernova 1054 is mentioned several times in Mesoamerican literature and that the appearance of the supernova took place rather during the second half of May 1054, than at early July 1054 as is often mentioned.

Lecture

Erwin Verwichte, Belgium

The Solar Corona as seen by the Extreme Ultraviolet Imaging Telescope

The Extreme ultraviolet Imaging Telescope (EIT) is part of the SoHO spacecraft which is reaching the end of its fifth year of continuous monitoring (with a little break) of the solar corona. In this time, the images from the EIT instrument have become very familiar to solar scientists but also to the general public.

In this talk I shall discuss what the EIT instrument can do, and give an overview of its achievements in advancing out knowledge of the sun. Through their participation in the EIT instrument , the Solar Physics Department of the Royal Observatory of Belgium (ROB) and the Centre Spatial de Liège (CSL) contributed to the instrument development, calibration and in-flight control. With EIT, the ROB is conducting scientific investigations of the local and global physics of the solar corona, and has initiated multi-instrument observing campaigns for that purpose. Based on a complete archive of all EIT observations assembled and maintained in Uccle, the ROB has now started an ambitious survey

of the upper solar atmosphere and its evolution, starting at the beginning of solar cycle 23 and extending beyond the forthcoming solar activity maximum.