

ESO Director General Visits the Vatican City

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¹ ESO

On 30 and 31 October 2009 the ESO Director General, Tim de Zeeuw, was invited to visit the Vatican City, as part of an international group of renowned astronomers, on the occasion of the International Year of Astronomy 2009.

The visit included a tour of the Tower of Winds at the Vatican — the first location of the Vatican Observatory, built between 1578 and 1580 at the time of the Gregorian reform of the calendar — a visit to the Vatican Secret Archives, the Sistine Chapel and the astronomy exhibit AStrum 2009 at the Vatican Museum. On display in this exhibition of astronomy and instruments are 130 items, including Galileo Galilei's original handwritten notes detailing his observations of the Moon, and his publication *Siderius Nuncius* from 1610.

The highlight of the day was a private audience with Pope Benedict XVI who addressed the group. In his speech, the Pope said: "This celebration, which marks the four hundredth anniversary of Galileo Galilei's first observations of the heavens with a telescope, invites us to consider the immense progress of scientific knowledge in the modern age and, in a particular way, to turn our gaze anew

Credit: Photo Service L'Osservatore Romano



The ESO Director General Tim de Zeeuw meeting Pope Benedict XVI during a visit to the Vatican City. Between the Director General and the Pope are Fr. José Gabriel Funes, director of the Vatican Observatory (right), and Cardinal Giovanni Lajolo, president of the Governorate of the Vatican City State.

to the heavens in a spirit of wonder, contemplation and commitment to the pursuit of truth, wherever it is to be found."

The Pope also expressed his "gratitude not only for the careful studies, which have clarified the precise historical context of Galileo's condemnation, but also for the efforts of all those committed to ongoing dialogue and reflection on the complementarity of faith and reason in the service of an integral understanding of Man and his place in the Universe".

The Pope also said: "The International Year of Astronomy is meant, not least to recapture, for people throughout our world, the extraordinary wonder and amazement which characterised the great age of discovery in the sixteenth century." He continued: "Who can

deny that responsibility for the future of humanity, and indeed respect for nature and the world around us, and demand — today as much as ever — the careful observation, critical judgement, patience and discipline which are essential to the modern scientific method? At the same time, the great scientists of the age of discovery remind us also that true knowledge is always directed to wisdom, and, rather than restricting the eyes of the mind, it invites us to lift up our gaze to the higher realm of the spirit."

This visit was organised by the Governorate of the Vatican City State and the Vatican Observatory as part of their celebrations of the International Year of Astronomy 2009 by the Holy See.

Announcement of the ESO Workshop

Central Massive Objects: The Stellar Nuclei–Black Hole Connection

22–25 June 2010, Garching, Germany

The centres of massive galaxies are special in many ways, not the least because all of them are believed to host supermassive black holes. Since the discovery of key relations linking the mass of the central dark object with the large-scale properties of the dynamically hot galactic component, it has become clear that the growth of the central black hole is

intimately connected to the evolution of its host galaxy. However, for lower-mass galaxies, the situation is much less clear. These galaxies, spanning a large range of Hubble types, typically host nuclear clusters of a few 10^6 – 10^7 solar masses. The presence of black holes and their relation to these nuclear clusters remains largely unknown.

Recent studies have shown that nuclear cluster masses are coupled to the mass of their host galaxy, following a relation similar to that for supermassive black holes, suggesting that both types of central massive objects (CMOs) are closely related. Although nuclear clusters are more than the low-mass analogues of supermassive black holes, all CMOs very

probably share some basic ingredients in their formation processes.

This workshop aims at bringing together a broad international audience in the combined field of galaxy nuclei, super-massive black holes and nuclear star clusters, to confront state-of-the art observations with cutting-edge models.

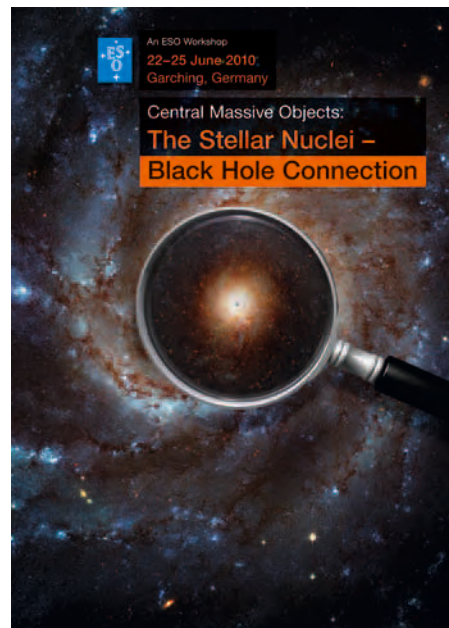
The key scientific questions for this workshop are:

- What is the evolutionary/causal connection between nuclear clusters and black holes?
- Are intermediate-mass black holes formed in nuclear clusters/globular clusters?
- Where do we stand observationally for black holes, nuclear clusters and intermediate-mass black holes?
- What can the Galactic Centre tell us about the nuclear cluster-black hole connection?
- How do the central massive objects relate to the host galaxies?

- What do theoretical models tell us about star formation in the extreme gravitational potential near the black hole and under the extreme stellar densities in galactic centres?
- What do theoretical models tell us about dynamics, evolution and migration of nuclear star clusters in galaxy centres?
- Do we understand the feeding of the central pc?
- How are nuclear clusters replenished with fresh gas?

The Scientific Organising Committee consists of: Eric Emsellem, Harald Kuntschner, Nadine Neumayer (all from ESO); Ralf Bender (LMU/MPE); Torsten Boeker (ESTEC); Elena Gallo (MIT); Reinhard Genzel (MPE); Ortwin Gerhard (MPE); Jenny Greene (Princeton); Simon Portegies Zwart (Leiden); Anil Seth (CfA); Roeland van der Marel (STScI) and Marta Volonteri (Michigan).

The registration deadline is 22 March 2010 and more details can be found at www.eso.org/sci/meetings/cmo2010.



New Staff at ESO

Rüdiger Kneissl

Since January of this year I have been working for ESO as an astronomer in Science Operations on the ALMA project. At the moment, while we are building ALMA, I spend a good fraction of my time on commissioning. It is exciting to see the project evolving so rapidly, from testing the first accepted antennas at the ALMA Operations Support Facility to interferometry at the Array Operations Site at 5000 m, and to be able to contribute at every step. The planning for operations is going on, along with progress on the completion of the instrument. Now we are detailing the processes for the first call for proposals and for the early science operations, which will follow.

Before joining ESO and ALMA, I worked in different places. After receiving my theoretical PhD from the University of Munich and the Max-Planck Institute for Astrophysics, I moved to Cambridge, England. There I learned about radio interferometry thoroughly, mainly on projects to measure the fluctuations in the cosmic microwave background (CMB) and to observe galaxy clusters via the Sunyaev-Zel'dovich (SZ) effect, with instruments such as the Cosmic Anisotropy Telescope, the Very Small Array and the Arcminute Microkelvin Imager. I also became involved in the Planck project, where I am now a scientist and a member of the High Frequency Instrument core team. At the University of California, Berkeley, and the Max-Planck Institute for Radioastronomy in Bonn I



continued CMB studies with the SZ-camera we commissioned on the APEX telescope. Now on ALMA, in spite of the huge work load, I am still able to do