



Dear Readers,

1.5 years is not a real birthday - but a good moment to start something new. Looking back to the starting days in October 2006 much has been achieved - and even more things are about to happen. For instance, the first Junior Research Groups are moving in our Garching headquarter, acting as the „strong force“ between the seven Research Areas of the Cluster. Also, there's a big event coming up: Our Symposium in June will gather top scientists - including Nobel Prize Winner George Smoot - who present their research in different cosmic epochs. Many projects, new people ... sometimes it's hard to keep track. Therefore we want to give you a regular update: This newsletter will inform you every two months about the latest news in the cluster. Your feedback and suggestions are very welcome - I'm looking forward to your e-mails to newsletter@universe-cluster.de!

Barbara Wankerl, Public Outreach Coordinator

PICTURE OF THE MONTH



First binocular light for the LBT! After more than a decade of preparation, the world's largest optical telescope is now looking skyward. The MPE, one of the institutions in the Excellence Cluster, makes a significant contribution to the LBT near infrared instrument LUCIFER and will use the LBT to study the evolution of galaxies in the early Universe. The image shows three false-color renditions of the spiral galaxy NGC 2770.

RESEARCH

Detection of a Putative Supernova Progenitor: The Hunt Goes On



The image from the Swift observatory (right) shows the supernova 2007on. The left image was taken four years before by the Chandra X-ray Observatory. It shows strong X-ray emission at almost exactly the position where the supernova later exploded

A few weeks ago Cluster scientist Rasmus Voss and Gijs Nelemans of Radboud University, Netherlands, published a paper on a fascinating subject. Using archival images of Chandra X-ray Observatory they found the progenitor of SN 2007on, a type Ia Supernova - or at least it seemed so.

Reviewing their findings with new high quality optical images from the ESO Faint Object Spectrograph and Camera on the 3,6-meter telescope at La Silla they discovered slight differences in the position of the X-ray source and the later

explosion. The offset in the magnitude of $1,18 \pm 0,27''$ has a probability of about 1 percent, equal to the probability of a chance alignment with any X-ray source in the field. These results cast doubt on the identification of the X-ray source with the progenitor, even though the properties of the X-ray source indicate a connection. However, the two scientists found a promising new detection method that might result in a certain detection of a progenitor. Now the scientists hope for new Chandra observations to shed more light on the assumed progenitor - the hunt will go on.

Excellence Cluster Universe and Berkeley Center for Cosmological Physics sign MoU

The Universe Cluster expands its international network with renowned research institutions: A co-operation between the newly founded Berkeley Center for Cosmological Physics (BCCP) and the Cluster has recently been finalized. Both institutions signed a Memorandum of Understanding.

The BCCP was founded by 2006 Nobel Prize Laureate George Smoot, who donated the majority of his prize money to this institution. The center aims to become a place where observational cosmologists like Smoot himself, phenomenologist and theorists come together with observers to solve the big questions of 21st century cosmology. Three main areas of cooperation have been defined. A [⇒ next page](#)

⇒ strong collaboration on questions related to the formation and evolution of the Universe, the structure of matter, space and time and the nature of the fundamental forces. Furthermore, there will be joint efforts in research related to the major topics of the two research institutions with special focus on the Planck mission and cosmological simulation.

The two institutions also will embark upon a co-operation in the field of education and public outreach. Thus, the Excellence Cluster joined the organizing committee of the Berkeley Center's school "Cosmology at the Beach", which is scheduled for January 2009 in Mexico.

EVENTS

Symposium „Symmetries and Phases in the Universe“: Last call for registration

23-25 JUNE 2008 • KLOSTER IRSEE



The symposium „Symmetries and Phases in the Universe“ will be held from June 23 to 25 in Kloster Irsee. This event will cover an extraordinary range of subjects spanning all epochs of the Universe. 16 top-level scientists will provide insight into their specific research fields and discuss their latest results with their colleagues. The introductory “big-picture” talk will be given by Joseph Silk, chairman of the Astrophysics Department at the University of Oxford, one of the most renowned scientists in the field of cosmology.

If you wish to join this event please register at <http://universe-cluster.de/symposium2008.php> until **15 April 2008**. More details on speakers, talks and conference venue can be found at the same address.

First Speakers' Meeting with the Deutsche Forschungsgemeinschaft in Bonn

On 28 and 29 February 2008 the Deutsche Forschungsgemeinschaft (DFG) held the first meeting with the speakers of the Clusters and Graduate Schools founded in the course of the German Excellence Initiative. The meeting addressed management aspects as well as future perspectives of these institutions.

Both speakers - Stephan Paul and Andreas Burkert - as well as Katja Ketterle, Head of Administration of the Universe Cluster, joined the meeting to exchange experiences and “lessons learned” so far. The most important issues discussed in the workshops were the structural develop-

ments and the perpetuation of the scientific jobs created during the first funding period. In view of the scientific success and the growing interest of the international research community the Excellence Clusters clearly favor a second founding cycle.

“The statement of the 150 participants representing 34 Clusters was unanimous”, reports Katja Ketterle. “They agreed that the Excellence Initiative has had a very positive impact on the German research landscape. To guarantee a lasting effect we need to continue our efforts – that’s the message we will deliver to the political decision makers.”

Socialising at the Universe Cluster



Have some food and meet your colleagues: For the third time the members of the Cluster took the opportunity to gather at the Cluster building. The social gatherings take place once a month – the next one will be on 10 April 2008 at 5.15 p.m. at the Cluster building. Hope to see you!

Scientific Program with current Lectures, Talks and Colloquia

<http://www.universe-cluster.de> ->Events

PEOPLE

Three Junior Research Group leaders at the Excellence Cluster Universe

Within the last six month the first three Junior Research Group (JRG) Leaders started their research work at the cluster. The first to arrive was Dr. Frank Simon, who now focuses on the development of detector technologies for particle physics experiments. Before joining the cluster, Simon worked as a Postdoctoral Associate at the Massachusetts Institute of Technology (MIT), Laboratory for

Nuclear Science. There he played a leading role in the polarized proton program of the STAR experiment at the Relativistic Heavy Ion Collider RHIC at Brookhaven National Laboratory.



Frank Simon

In January, Prof. Dr. Laura Fabbietti and Prof. Dr. Tobias Lachenmaier joined the cluster.

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→ In 2007 Fabbietti was the leader of a “Helmholtz Young Investigator Group” at TUM. At the Cluster she will now create and lead a JRG with the focus on the study of the kaonic cluster production in elementary reaction at GSI. In this position Fabbietti will be an important link between the existing experimental and theoretical expertise in nuclear-, hadron-, and astrophysics in the Munich area.



Laura Fabbietti



Tobias Lachenmaier

Before his return to Munich, Tobias Lachenmaier, who received his PhD in experimental astroparticle physics from TUM, held a Postdoc position at the “Physikalisches Institut” of the Universität Tübingen. At TUM Lachenmaier had gained a profound expertise in advanced detection techniques in the context of low background measurements with low temperature detectors.

In Tübingen he then continued his research on neutrino oscillations. At the Cluster, Lachenmaier now collaborates with scientists at TUM in experiments, for example on low energy neutrino astronomy and neutrino properties, as well as on direct search for dark matter particles.

Welcome at the Cluster!

Junior Research Group Leader: Dr. Peter Fierlinger (Fundamental Physics with Neutrons, since 1 Apr. 2008)

Fellows: Dr. Sara Lucatello (since 21 Jan. 2008, RA G) ++ Dr. Andrea Merloni (since 1 Apr. 2008, RA F)

Guests: Dr. Patricia Ball (University of Durham, 1 Apr.-1 Sept. 2008) ++ Prof. James A. Stone (Princeton University, 21-26 Apr. 2008)

Postdocs: Dr. Doris Dillmann ++ Dr. Shaojun Lu ++ Dr. Andreas Marek ++ Dr. Nina Nowak ++ Dr. Christoph Pahl ++ Dr. Stefan Typel

Administration: Margit Rieken (7 Apr. 2008, Accounting)

Interview with Sara Lucatello



Sara Lucatello

“I want to be part of such an exceptional project” says Dr. Sara Lucatello when asked about her motivation to apply as Research Fellow at the Excellence Cluster Universe. Sara has been a Research Fellow with the Cluster since January. Before then, Sara held a tenure track position at the Italian National Institute for Astrophysics in Padova. Additionally, she was a frequent visiting scientist at UCO Lick Observatory in California and worked for several months as a postdoctoral researcher at the University of Texas, Austin. Her research is aimed at a better understanding of the early stages in the existence of the Milky Way. Within the Cluster, Sara is part of Research Area G (Heavy Elements).

We talked with Sara about her first impressions:

What was your motivation to apply as Research Fellow at the Excellence Cluster Universe?

I found the concept of the cluster, i.e. bringing together scientists from very different backgrounds and expertise, extremely interesting. It offers a unique possibility to collaborate on such interesting and fundamental issues such as the origin of the Universe. I want to be part of such an exceptional project.

What is your impression of the Cluster so far? How do you describe the collaboration with other Cluster scientists?

The Cluster is an extremely friendly environment, offering chances to interact with scientists both within the Cluster and visitors. Collaborations are still at their building stage – just got here about two months ago – but the first impressions are encouraging and I am sure it will get livelier when more people join us.

You joined the Cluster's RA G. What will be your main focus within this RA for the next two years? And what do you hope to achieve?

Through spectroscopic observations of the most metal poor, i.e. the oldest stars in our Galaxy, I hope to be able to constraint the nucleosynthetic processes which produce the heavy elements, and shed light on the physical mechanisms involved.

As a newcomer to Munich what do you like best about the city?

I like Munich very much, there are lots of things to do and see, even though I cannot enjoy it at its fullest as I don't speak the language -yet! One thing that struck me is how safe the city is. I love to be able to walk around the city at night, use public transportation until closing time.

Have you found your favorite Italian restaurant you could recommend?

Not yet. I like trying new things, so since I haven't been here long, so far I have enjoyed all the food diversity of Munich, but no Italian.

LINKS

TV science programs, science websites and blogs spring up like mushrooms – here's another one: the 5-minute vodcast weekly spreads the latest news, curiosities and absurdities in the German science landscape. Ehrensens fans will love it!

<http://www.wisskommmtv.de/>

Have you ever talked to a supporter of “Intelligent Design” claiming the Universe was created exactly 6000 years ago? If you ran out arguments you may find this little brochure useful. Issued by the National Academy of Sciences in the USA, it provides some hard facts that should help you making a point for science.

<http://evolutionmatters.ucsd.edu/SECbrochure.pdf>

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