

Garching

Max-Planck-Institut für Astrophysik

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0 Allgemeines

0.1 Kurzgeschichte

Das Institut für Astrophysik ging hervor aus der gleichnamigen Abteilung am Göttinger MPI für Physik. Mit dem Umzug nach München im Jahre 1958 wurde dieses erweitert zum MPI für Physik und Astrophysik mit Heisenberg und Biermann als Direktoren. Die Arbeiten zur theoretischen Astrophysik lieferten grundlegende Erkenntnisse zur Sonnenphysik, Plasmaphysik und Sternstruktur. 1963 wurde als neues Teilinstitut das Institut für extraterrestrische Physik gegründet. 1991 erfolgte die Aufteilung in drei eigenständige Max-Planck-Institute, das MPI für Physik (MPP), das MPI für Astrophysik (MPA) und das MPI für extraterrestrische Physik (MPE). 2008 feierte das MPA sein 50-jähriges Jubiläum. Im Herbst 2009 bekam das MPA die Genehmigung für einen Erweiterungsbau. Ziel ist es in dem neuen Gebäude einen größeren Hörsaal (130 Sitze), die Computer Gruppe, sowie die Verwaltung (MPE/MPA) unterzubringen. Die Räumlichkeiten im Altbau sollen dann von den MPA Wissenschaftler/innen genutzt werden. Voraussichtliches Ende der Bauarbeiten ist Frühjahr 2013.

1 Personal und Ausstattung

1.1 Personalstand

Direktoren und Professoren:

M. Asplund (bis 31.8.), W. Hillebrandt [-2200](Geschäftsführender Direktor bis 31.12.2011),
R. Sunyaev [-2244], S.D.M. White [-2211] (Geschäftsführender Direktor ab 1.1.2012).

Sekretariat und Verwaltung:

C. Rickl [Sekr. Geschäftsführung, -2201]

M. Ihle [Verwaltungsleiter, -3600]

Auswärtige Wissenschaftliche Mitglieder:

R. Giacconi, R.-P. Kudritzki, W. Tscharnuter.

Emeritierte Wissenschaftliche Mitglieder:

H. Billing, R. Kippenhahn, F. Meyer, H.U. Schmidt, E. Trefftz.

Wissenschaftliche Mitarbeiter:

R. Angulo, A. Bauswein, M. Bell, M. Bergemann, A. Bogdan (bis 31.1.), P.M. Bottino (1.2.-31.5.), L. Casagrande (bis 31.12.), B. Catinella, P. Cerda-Duran (bis 31.10.), E. Churazov, B. Ciardi, R. Collet (bis 14.10.), A. Cooper, I. Cordero-Carrión, M. Dijkstra, J. Donnert (1.7.-30.9.), M. Dotti (bis 28.2.), T. Enßlin, M. Fink (bis 31.5.), J. Fu, M. Gabler (seit 1.12.), M. Gilfanov, T. Greif, M. Grossi (bis 31.7.), A. Gualandris, S. Hachinger (1.7.-30.9.), B. Henriques, C. Hernandez-Monteagudo (bis 14.4.), G. Hütsi (seit 1.10.), H.-T. Janka, P. Jofre-Pfeil (bis 30.4.), J. Johansson (seit 27.9.) G. Kauffmann, R. Khatri, S. Khedekar (seit 21.9.) K. Kovac (bis 31.12.), R. Krivonos, M. Kromer, D. Kruijssen (seit 20.7.), K. Lind, G. Lemson, M. Maciejewski, A. Marino, I. Maurer (bis 31.5.), P. Mazzali, B. Metcalf (bis 28.2.), S. Mineo (1.9.-31.10.), P. Montero, B. Moster, B. Müller, E. Müller, T. Naab, M.F. Nieva (bis 30.6.), R. Overzier (bis 31.8.), Biswajit Pandey (seit 1.2.), M. Reinecke, G. Ruchti, A. Ruiter, A. Saintonge, L. Sales, L. Sbordone (bis 14.6.), C. Scoccola (bis 21.6.), I. Seitzzahl (bis 31.5.), F. Shankar (bis 31.5.), H.C. Spruit, A. Sternberg (seit 15.12.), T. Tanaka (seit 1.9.), S. Taubenberger, S. Tsygankov (bis 30.6.), S. Walch (seit 1.11.), A. Weiss, R. Wiersma (bis 30.9.), A. Wongwathanarat (seit 1.3.). I. Zhuravleva (seit 1.11.)

Doktoranden:

R. Andrassy* (seit 1.9.), M. Aumer, P. Baumann, S. Benitez, V. Biffi*, A. Chung* (sinc 1.9.), B. Ciambur* (seit 1.9.), F. Ciaraldi-Schoolmann, F. De Gasperin, J. Donnert (bis 31.6.), P. Edelmann, S. Fabello*, M. Gabler (bis 25.11.), L. Graziani*, S. Hachinger (bis 30.6.), F. Hanke, N. Hariharan* (seit 1.9.), M. Herzog, M. Hilz, L. Hüdepohl, M.L. Huang, F. Ianuzzi*, A. Jendreieck* (seit 1.8.), A. Jeesson-Daniel*, H. Junklewitz, O. Just, S. Karl (bis 31.10.), F. Koliopanos* (seit 1.9.), A. Kolodzig* (seit 1.4.), N. Krachmalnikoff* (bis 31.12.), C. Laporte*, M. Li, Z.W. Liu, N. Lyskova*, T. Mädler (bis 28.2.), Z. Magic*, F. Miczek, S. Mineo* (bis 31.8.), U. Nöbauer, N. Oppermann, L. Oser, M. Petkova* (bis 31.8.), E. Plumbi* (seit 1.10.), L. Porter*, S. Rau, T. Rembiasz*, M. Sasdelli* (seit 10.10.), R. Schönrich (bis 30.11.), M. Selig (seit 1.11.), V. Silva*, F. Stasyszyn (bis 28.2.)*, I. Thaler*, M. Ugliano*, M. van Daalen*, J. von Grootte, M. Wadepuhl, J. Wang, A. Wongwathanarat* (bis 28.2.), T. Woods* (seit 12.9.), R. Yates, Z. Zhang*, I. Zhuraleva* (bis 31.10.).

Diplomanden, Bachelor- und Masterstudenten:

T. Ertl (seit 14.11.), M. Gänsler (seit 14.3.), E. Gall (bis 15.11.), N. Heners (seit 15.5.), S. Lutter (bis 15.11.), U. Nöbauer (bis 1.2.), M. Selig (bis 20.9.), M. Uhlig (bis 1.11.), H. Weingartner (bis 1.11.), L. Winderling (seit 1.10.)

Technisches Personal - PLANCK Programmierer:

U. Dörl, W. Hovest, J. Knoche, J. Rachen, J. Robbers, T. Riller.

Systemadministratoren:

H.-A. Arnolds, B. Christandl, N. Grüner, H.-W. Paulsen.

Sekretariat:

M. Depner, S. Gründl, G. Kratschmann, K. O'Shea, C. Rickl (Skr. Geschäftsführung).

Bibliothek:

E. Blank, E. Chmielewski (Leitung), C. Hardt.

*IMPRS (International Max-Planck Research School)

1.2 Gebäude und Bibliothek

Die Bibliothek befindet sich im Astrogebäude und wird von Wissenschaftlern zweier Institute genutzt, dem Max-Planck-Institut für Astrophysik und dem Max-Planck-Institut für extraterrestrische Physik. Die Bibliothek besitzt aktuell (2011) ca. 45.000 Bücher und Konferenzproceedings, sowie Abonnements für ca. 200 wissenschaftliche Zeitschriften. Seit dem 1.1.2010 wird ein neues System verwendet, das von der Max-Planck Digital Library in Zusammenarbeit mit dem Fachinformationszentrum Karlsruhe entwickelt worden ist.

1.3 Personelle Veränderungen

Benedetta Ciardi: erhielt den Italienischen Verdienstorden (Cavaliere della Repubblica Italiana)

Hans-Thomas Janka: erhielt den *Hanno und Ruth Roelin-Preis* für Wissenschaftspublizistik 2011.

Markus Kromer: erhielt die *Otto-Hahn-Medaille* der Max-Planck-Gesellschaft.

Rainer Moll: erhielt den *Kippenhahn Preis* für die beste Publikation der Doktoranden 2011.

Rashid Sunyaev: erhielt die *2012 Franklin Medaille in Physik* sowie den *2011 Kyoto Preis* in Wissenschaften.

Hendrik Spruit: erhielt den *George Ellery Hale Prize* für hervorragende Leistung in der Sternphysik.

Simon White: erhielt (zusammen mit drei anderen Astronomen) den *Gruber Kosmologie Preis*.

2 Gäste

Pavel Abolmasov (Moskau Univ.) 12.11.–11.12.; Marcelo Alvarez (CITA, Kanada) 6.3.–3.4.; Mashhor Al Wardat (Talal, Jordan) 25.5.–22.8.; Patricia Arevalo (Univ. Cat. Chile) 1.7.–30.7.; Tony Banday (Toulouse, Frankreich) 2.3.–16.3. ; Isabelle Baraffe (ENS, Lyon, Frankreich) 3.7.–2.8.; Altan Baykal (Ankara, Türkei) 22.7.–15.8.; Andrey Belyaev (St. Petersburg) seit 15.11.; Sergey Blinnikov (ITEP, Moskau) 1.8.–10.9.; Akos Bogdan (CfA, Cambridge, USA) 5.6.–18.6.; Volker Bromm (Texas Univ., USA) 8.4.–11.6.; Matt Browning (CITA, Kanada) 14.2.–28.2.; Brian Chaboyer (ENS, Lyon, Frankreich) 3.7.–2.8. ; Jens Chluba (CITA, Kanada) 6.10.–18.10.; Nikolay Chugai (Inst. of Astron. Moskau) 28.2.–30.3.; Peter Cotrell (Christchurch, Neuseeland) 15.5.–15.8.; Ismail Ferrero (Cordoba, Argentinien) seit 1.10.; Charles Gammie (Univ. of Illinois, USA) 1.4.–21.7.; Nicolas Grevesse (Liege, Belgien) 3.7.–21.7.; Qi Guo (Peking, China) 27.11.–11.12.; Carlos Hernandez Monteagudo (Teruel, Spanien) 1.6.–20.6.; Gerd Hütsi (Tallin, Estland) 15.2.–15.5.; Nail Inogamov (Landau Inst. Moskau) bis 27.2.; und 15.11.–14.12.; Emille Ishida (IPMU, Kashiwa, Japan) 1.5.–9.7.; Anatoly Iyudin (Moskau, Russland) 4.7.–16.7.; Francisco Kitaura (AIP, Potsdam) 1.4.–30.6.; Sergey Komarov (IKI Moskau, Russland) 1.7.–31.7.; Rolf-Peter Kudritzki (Hawaii Observ.) 1.1.–31.12.; Cheng Li (Shanghai Obs., China) 2.10.–30.11. ; Ming Li (CAS, China) seit 2.11.; Zhengwei Liu (CAS, China) seit 18.1.; Tina Lund (Aarhus, Dänemark) 7.3.–6.6.; Claudia Maraston (Portsmouth, U.K.) 8.4.–8.5.; Lyudmilla Mashonkina (RAS, Moskau) 30.5.–10.6.; Akira Mizuta (Chiba Univ., Japan) 2.8.–11.9.; Dmitriy Nadyozhin (ITEP Moskau) 14.3.–14.5.; Biman Nath (Raman Res. Inst. Bangalore Indien) 18.3.–17.6.; Julio Navarro (Victoria, Kanada) 8.5.–21.5.; Sergey Nayakshin (Leicester, U.K.) 4.7.–4.8.; Ken Nomoto (Univ. of Tokyo, Japan) 28.8.–10.9.; Yeisson Osorio (Uppsala Univ.) 17.10.–05.11.; Francisco Prada (IAA, Spanien) 7.4.–7.5.; und 1.7.–30.7.; Eliot Quataert (Berkeley, USA) 3.7.–22.7.; Maurizio Salaris (Liverpool, U.K.) 6.7.–17.7. ; Michelle Sasdelli (Trieste, Italien) 17.4.–1.5. ; (und 8.9.–24.9.); Sergey Sazonov (IKI Moskau) 5.1.–13.2. ; (und 15.7.–21.8.); Pat Scott (Montreal, Kanada) 4.7.–24.7. ; Nikolay Shakura (Sternberg Astron. Moskau) 12.11.–11.12.; Stuart Sim (Stromlo Obs, Australien) 13.3.–27.3.; Daniel Thomas (Portsmouth, U.K.) 8.4.–8.5.; Rajat Thomas (CITA, Kanada) 7.3.–11.4.; Alexei

Tolstov (ITEP, Moskau) 1.8.–21.8.; Victor Utrobin (ITEP, Moskau) 17.10.–16.12.; Freeke van de Voort (Leiden Univ.) 7.2.–6.8.; Shinya Wanajo (CLUSTER Gast) 1.1.–31.12.; Wenting Wang (Shanghai Observ.) bis 15.11.; Jing Wang (USTC China) bis 14.11.; Tim White (Sydney, Australien) 9.11.–21.1.; Stuart Wytthe (Melbourne, Australien) 9.2.–8.3.; Phillip Zukin (Cambridge, USA) 1.8.–31.8.

3 Lehrtätigkeit, Prüfungen und Gremientätigkeit

3.1 Lehrtätigkeiten

W. Hillebrandt: WS 2010/2011 and WS 2011/2012 TU München
 T.A. Enßlin: SS 2011 und WS 2011/2012 (seminar), LMU München
 H.-Thomas Janka: SS 2011, TU München
 E. Müller: WS 2010/2011 und SS 2011, TU München
 H. Ritter: WS 2010/2011, LMU München
 A. Weiss: SS 2011, LMU München

3.2 Sonstige Kurz-Vorlesungen

M. Asplund: “The chemical composition of the Sun and solar-type stars” (Center of Planetary Science, Kobe, Japan, 10.1-15.1)
 M. Dijkstra: “Probing the Epoch of Reionization with Lyman Alpha Emitting Galaxies + X-Ray heating during the Epoch of Reionization” (ETH Zürich, 7.4 –8.4)
 A. Weiss: “Stellar Structure and Evolution” (IMPRS on Astrophysics, Garching, 24.10.–28.10.)
 R. Sunyaev: Kyoto Prize Commemorative lecture, (Kyoto Kongress Hall, 11.11.)
 – Hendrik de Waard Jubilee Lecture, (Groningen, 24.5.)

3.3 Gremientätigkeit

M. Asplund: – Sloan Digital Sky Survey Collaboration Council; – Vorsitz des Joint Astronomical Colloquium Komitee; – Wissenschaftlicher Beirat - Virtual Atomic and Molecular Data Centre; – Steering Committee, Gaia-ESO Survey; – GMT Instrumental Development Advisory Panel; – IAU Kommission 36 president; – IAU Kommission 29 organizing committee.
 B. Ciardi: – Mitglied des Wissenschaftsrat von IAU Kommission 47 (Kosmologie); – Vorsitzende des Wissenschaftlichen Rats von GLOW (German LOng Wavelength) Konsortium; – Projektleiterin der Arbeitsgruppe LOFAR am MPA.
 T. Enßlin: – Berichterstatter für Planck Ausschuss; – Projektleiter des Datenanalysezentrum PLANCK am MPA; – Doktoranden Auswahlkomitee, Genf Univ.; – Doktoranden Auswahlkomitee, Bologna Univ.; – Diplomstudenten Auswahlkomitee, LMU München.
 M. Gilfanov: Vorsitz des Ausschuss für Antragsbewertung von CHANDRA.
 W. Hillebrandt: – Beirat, Rechenzentrum Garching; – Senatsausschuss Wettbewerb, Leibniz Gemeinschaft; – Vorsitzender/Ausschuss ESO Observing Programmes Committee; – Beratungskomitee Astrophysics, GIF; – Internationaler Beratungsausschuss, Oskar Klein Centre, Stockholm; – Wissenschaftsrat, Zentrum für Astronomie, Univ. Heidelberg
 G. Kauffmann: – Mitglied des Organisationskomitee “Joint Kolloquium”; – Stellvertretende Gleichstellungsbeauftragte am MPA; – Mitglied des Kavli Preis Komitees – Astromet, Vorsitzende der Arbeitsgruppe “wide field spectroscopy” – Bewerbungskomitee, Uni Stockholm

E. Müller: – Vorstandsmitglied des Sonderforschungsbereichs “Transregio Gravitationswellenastronomie”; – Vorsitzender des Benutzerkomitees und Beirat am Rechenzentrum Garching (RZG/IPP); – Betriebsratvorsitzender am MPA; – Mitglied des Bewerbungskomitee für MPA Postdoktoranden

A. Weiss: Mitarbeitervertreter, CPT-Sektion der Max-Planck-Gesellschaft

S.D.M. White: – verschiedene Berufungskommissionen der CPT-Sektion der MPG; – Mitglied des Beratungsausschusses “Canadian Institute for Advanced Research, Cosmology and Gravity Program”; – Vorsitzender/Beratungsausschuss, ICC Durham Univ., England; – Mitglied/Beratungsausschuss, Kavli Institut für Astronomie und Astrophysik, Peking, China; – – Mitglied des Führungs-/Wissenschaftskomitee, Institut Lagrange de Paris, Frankreich.

4 Wissenschaftliche Arbeiten

Für Informationen zu den wissenschaftlichen Arbeiten unseres Instituts, besuchen Sie bitte unsere Webseite unter: <http://www.mpa-garching.mpg.de> und klicken Sie “Über das Institut” und “Jahresberichte” an. Sollten Sie kein Internet haben, können Sie gerne kostenlos einen Jahresbericht unter der Telefon-Nummer 089/30000-2214 anfordern.

4.1 Dissertationen

Abgeschlossen:

Julius Donnert: On the diffuse non-thermal emission from galaxy clusters. Ludwig-Maximilians-Universität München.

Michael Gabler: Coupled core-crust-magnetosphere oscillations of magnetars. Technische Universität München.

Stephan Hachinger: Analysis of spectra of Type I Supernovae with radiative transfer models. Technische Universität München.

Steffen Hess: Particle hydrodynamics with tessellation techniques. Ludwig-Maximilians Universität München.

Simon Karl: The Antennae Galaxies - a key to galactic evolution. Ludwig-Maximilians-Universität München.

Thomas Mädler: Axially symmetric space-times and the characteristic formulation of general relativity. Technische Universität München.

Stefano Mineo: X-ray emission from star-forming galaxies. Ludwig-Maximilians Universität München.

Margarita Petkova: Numerical radiative transfer and the hydrogen reionization of the universe. Ludwig-Maximilians Universität München.

Till Sawala: Simulations of Dwarf Galaxy Formation. Ludwig-Maximilians Universität München.

Ralph Schönrich: Structure, kinematics and chemistry of the Milky Way Galaxy. Ludwig-Maximilians Universität München.

Victor Silva: Mixing processes in stellar interiors: new insights from asteroseismology. Ludwig-Maximilians Universität München.

Federico Stasyszyn: Smoothed particle magneto-hydro-dynamics for cosmological applications. Ludwig-Maximilians-Universität München.

Jing Wang: The relation between morphology, star formation rate and gas fraction in galaxies. Univ. of Science and Technology of China.

Annop Wongwathanarat: Multidimensional simulations of core collapse supernovae using

a two-patch overset grid in spherical coordinates. Technische Universität München.

Irina Zhuravleva: Radiative transfer in hot gas of galaxy clusters: constraints on ICM turbulence. Ludwig-Maximilians Universität München.

Laufend:

Monique Alves-Cruz: S-process in extremely metal-poor stars. Ludwig-Maximilians- Universität.

Robert Andrassy: Convective overshooting in stars by 3-D simulations. University of Amsterdam.

Michael Aumer: Simulations of Disk Galaxy Evolution. Ludwig-Maximilians-Universität.

Patrick Baumann: Chemical composition of solar-type stars and its impact on planet-hosting. Ludwig-Maximilians-Universität.

Sandra Benitez: Model-Independent Reconstruction of the Expansion History of the Universe. Technische Universität München.

Veronica Biffi: Studying the physics of galaxy clusters by simulations and X-ray observations. Ludwig-Maximilians-Universität.

Andrew Chung: High-redshift Lyman- α 945; Emitters. Ludwig-Maximilians-Universität.

Bogdan Ciambur: Extensions of semi-analytic modelling to the study of the galaxy population evolution with redshift. Ludwig-Maximilians-Universität.

Franco Ciaraldi-Schoolmann: Stochastic modeling of Type Ia supernovae explosions in Large Eddy Simulations. Technische Universität München.

Francesco De Gasperin: Cosmological Evolution of Supermassive Black Holes With LO-FAR. Ludwig-Maximilians-Universität.

Philipp Edelmann: Hydrodynamical simulations coupled to nuclear reaction networks in stellar astrophysics. Technische Universität München.

Silvia Fabello: HI properties of nearby galaxies from ALFALFA data stacking. Ludwig-Maximilians-Universität.

Luca Graziani: Cosmological Radiative Transfer through metals in CRASH. Ludwig-Maximilians-Universität.

Florian Hanke: Three-dimensional simulations of core-collapse supernovae using a detailed neutrino transport description. Technische Universität München.

Nitya Hariharan: Numerical Developments of the Radiative Transfer code CRASH. Technische Universität München.

Matthias Herzog: Dynamical Simulations of Phase Transitions in Compact Stars. Technische Universität München.

Michael Hilz: Evolution of Elliptical Galaxies. Ludwig-Maximilians-Universität.

Lorenz Hüdepohl: Neutrino cooling evolution of newly formed proto neutron stars. Technische Universität München.

Mei-Ling Huang: Radially resolved star formation histories of disk galaxies. Ludwig-Maximilians-Universität.

Francesca Iannuzzi: Studying the survival of galaxies in hydrodynamical simulations of clusters. Ludwig-Maximilians-Universität.

Akila Jeesson-Daniel: Lyman Alpha Emitters around the Epoch of Reionization. Ludwig-Maximilians-Universität.

Andressa Jendrieck: Stellar Parameter Estimation for Kepler Stars. Ludwig-Maximilians-Universität.

- Henrik Junklewitz: Magnetic Field Statistics and Information field theory. Ludwig-Maximilians-Universität.
- Oliver Just: Numerical models of hyper-accreting post-merger accretion tori. Technische Universität München.
- Simon Karl: The Antennae Galaxies - a key to galactic evolution. Ludwig-Maximilians-Universität.
- Filippos Koliopoulos: Radiation processes in compact X-ray sources. Ludwig-Maximilians-Universität.
- Alexander Kolodzig: AGN in the eROSITA all-sky survey: Statistics and correlation properties. Ludwig-Maximilians-Universität.
- Chervin Laporte: Galaxies in clusters. Ludwig-Maximilians-Universität.
- Natalya Lyskova: Physics of hot gas in elliptical galaxies. Ludwig-Maximilians-Universität.
- Zazralt Magic: Theoretical models for cool stars including multidimensional atmospheres. Ludwig-Maximilians-Universität.
- Fabian Miczek: Simulation of low Mach number astrophysical flows. Technische Universität München.
- Ulrich Nöbauer: A Monte Carlo Approach to Radiation Hydrodynamics in Astrophysical Environments. Technische Universität München.
- Niels Oppermann: Non-Gaussianities in Cosmology. Ludwig-Maximilians-Universität.
- Ludwig Oser: Galaxy Formation and Evolution. Ludwig-Maximilians-Universität.
- Else Pillumbi: Nucleosynthesis studies for supernova and binary merger ejecta. Technische Universität München.
- Laura Porter: Modelling dust in cool stellar and substellar atmospheres. Ludwig-Maximilians-Universität.
- Stefan Rau: Gravitational lensing studies of dark matter halos. Ludwig-Maximilians-Universität.
- Tomasz Rembiasz: Non-ideal MHD instabilities and turbulence in core collapse supernovae. Technische Universität München.
- Michele Sasdelli: Principal Components Analysis of type Ia supernova spectra. Ludwig-Maximilians-Universität.
- Marco Selig: Information Theory Based High Energy Photon Imaging. Ludwig-Maximilians-Universität.
- Irina Thaler: Solar magnetohydrodynamics. Uni Amsterdam.
- Marcella Ugliano: Explosion and remnant systematics for neutrino-driven supernovae. Technische Universität München.
- Marcel van Daalen: Correlation functions from the Millennium XXL simulation. Ludwig-Maximilians-Universität.
- Janina von Groote: Hydrodynamic modelling of the accretion-induced collapse of white dwarfs with detailed neutrino transport. Technische Universität München.
- Markus Wadepuhl: Simulations of the formation of a Milky Way like galaxy. Technische Universität München.
- Tyrone Woods: The Progenitors of Type Ia Supernovae. Ludwig-Maximilians-Universität.
- Rob Yates: Metal enrichment in galaxy formation models. Ludwig-Maximilians-Universität.
- Zhongli Zhang: Low-mass X-ray binaries in early-type galaxies. Ludwig-Maximilians-Universität.

4.2 Diplomarbeiten

Abgeschlossen:

Elisabeth Gall: Interpreting the Near-Infrared Spectra of Type I Supernovae using the “Golden Standard” of SN2005cf as an Example. Technische Universität München.

Stefan Lutter: Evolution and Stability of Disk Galaxies. Ludwig-Maximilians Universität, München.

Ulrich Nöbauer: Monte Carlo radiation hydrodynamics. Technische Universität München.

Marco Selig: Information field theory for high energy astronomy Technische Universität München.

Maximilian Uhlig: Cosmic ray driven Winds in Galaxies. Technische Universität München.

Maximilian Ullher: Eine Faradaykarte der Milchstraße unter Annahme approximativer Symmetrien. Ludwig-Maximilians Universität, München.

Helin Weingartner: Statistische Modellierung und Rekonstruktion von diffuser Röntgenstrahlung von Galaxienhaufen. Technische Universität München.

5 Tagungen, Projekte am Institut und Beobachtungszeiten

5.1 Beobachtungszeiten

M. Bergemann (MPA), K. Lind (MPA), M. Asplund (MPA) 02.07 - 08.07, Solar Swedish Telescope, Tenerife, Spain Benchmarking atomic models for stellar abundance analysis using spatially resolved solar lines

B. Catinella and L. Cortese (ESO): 03.5.–16.05. Arecibo radiotelescope, PR, USA Characterizing the properties of gas-rich galaxies at z 0.2 and higher.

B. Catinella, S. Fabello, A. Cooper (MPA), C. Hummels, J. Lemonias (Columbia), S. Moran (JHU), R. Wu (CEA): 11.01.–09.12. Arecibo radiotelescope, PR, USA (observations carried out remotely from MPA and other institutions) Measuring the HI content of massive galaxies (GALEX Arecibo SDSS Survey).

W. Hillebrandt, F.K. Roepke, M. Kromer, S. Taubenberger, M. Fink, S. Benitez, S. Hachinger: several nights in 2011, University of Hawaii 2.2m Telescope, Mauna Kea, Hawaii, SNIFS, Measuring H α with Type IIP Supernovae.

K. Lind, M. Bergemann (MPA), M. Asplund (MPA), D. Kiselman (Stockholm Observatory) Solar Swedish Telescope, La Palma, 22.06.-08.07. Benchmarking atomic models for stellar abundance analysis using spatially resolved solar lines.

K. Lind, M. Asplund, F. Primas (ESO), C. Charbonnel (Geneva Observatory), F. Grundahl (Aarhus University), 27.06, 29.06., 05.08., FLAMES spectrograph at VLT/UT2 Paranal, Chile. The Li content of M30, the most metal-poor globular cluster in the Galaxy. (All observations done in service mode).

H. Spruit, I. Thaler (MPA), G. Scharmer(ISP): 1.6.–7.6., Swedish 1-m Solar Telescope, La Palma, Canarias. Effect of weak magnetic fields on the Sun’s brightness.

S. Taubenberger, W. Hillebrandt, P.A. Mazzali, F. Patat (ESO), N. Elias-Rosa (Caltech), S. Benetti (Padova), I. Agnoletto (Padova), V. Stanishev (Lisbon), A. Pastorello (Belfast): 6 nights in 2011, service observations, Calar Alto 2.2m Telescope, Calar Alto, Spain, CAFOS, The contribution of Supernovae to the cosmic chemical evolution.

S. Taubenberger, W. Hillebrandt, P.A. Mazzali, F. Patat (ESO), N. Elias-Rosa (Barcelona), S. Benetti (Padova), F. Bufano (Padova), V. Stanishev (Lisbon), A. Pastorello (Belfast): 6 nights in 2011, service observations, Calar Alto 2.2m Telescope, Calar Alto, Spain, CAFOS, The contribution of Supernovae to the cosmic chemical evolution.

S. Taubenberger, S. Benetti (Padova), K. Maeda (Tokyo), P.A. Mazzali, J. Sollerman (Stockholm), D. Sauer (Stockholm), V. Stanishev (Lisbon), G. Leloudas (Copenhagen), F. Bufano (Padova), A. Harutyunyan (St. Cruz de La Palma), F. Patat (ESO), N. Elias-Rosa (Caltech), M. Stritzinger (Stockholm), G. Pignata (Santiago de Chile), I. Maurer, S. Hachinger, F.K. Roepke, W. Hillebrandt: 18.3 hr of service observations, VLT-Antu, Paranal, Chile, FORS2, Constraining the explosion mechanism of type Ia supernovae through late-phase spectroscopy.

S. Taubenberger, S. Benetti (Padova), K. Maeda (Tokyo), P.A. Mazzali, J. Sollerman (Stockholm), V. Stanishev (Lisbon), G. Leloudas (Copenhagen), F. Bufano (Padova), A. Harutyunyan (St. Cruz de La Palma), F. Patat (ESO), N. Elias-Rosa (Barcelona), M. Stritzinger (Stockholm), G. Pignata (Santiago de Chile), I. Maurer, S. Hachinger, F.K. Roepke, M. Kromer, W. Hillebrandt: 7.4 hr of service observations, VLT-Antu, Paranal, Chile, FORS2, Constraining the explosion mechanism of type Ia supernovae through late-phase spectroscopy.

5.2 Vorträge und Gastaufenthalte

Übersichtsvorträge

M. Asplund: 7th International School of Planetary Sciences (Kobe, Japan, 10.1-15.1) – Origin of the elements (Trento, Italy, 16.5-20.5) – Galactic archaeology (Shuzenji, Japan, 1.11-5.11) – Origin of matter and evolution of Galaxies (Tokyo, Japan, 14.11-17.11) – OMEG5 (Tokyo, Japan, 18.11)

G. Börner: Die Entwicklung des Kosmos. Jahresversammlung der Nationalen Akademie der Wissenschaften Leopoldina (Halle, 23.9.-25.9.)

B. Ciardi: The first galaxies workshop (Ringberg, Germany 27.06.–01.07) – Gas in Galaxies: from Cosmic Web to Molecular Clouds (Seeon, Germany 14.06.–18.06) – GRBs as probes: from the progenitors' environment to the high redshift universe (Como, Italy, 16.05.–20.05.) – Ringberg Workshop on Galaxy Evolution (Ringberg, Germany, 18.04.–21.04.)

E. Churazov: Astrophysics and Cosmology with Galaxy Clusters, (Santa Barbara, 14.3.-18.3.) – Fornax, Virgo, Coma et al., (Garching, 27.6.-1.7.) – JENAM 2011, (St.Petersburg, Russia, 4.7.-8.7.) – 2011 Chandra Science Workshop, (Boston, USA, 12.7.-14.7.)

M. Dijkstra The Cosmic Odyssey of Baryons conference (Marseille, France, 20.6-24.6) – Hydrogen Cosmology Workshop (Cambridge, MA, USA, 16.5 – 20.5)

T.A. Enßlin: Primordial Magnetism Workshop (Arizona State University, 30.3.–2.4.) – 2011 Ringberg Workshop on Galaxy Evolution (Ringberg Castle, 17.4.-22.4.) – A fresh view of the radio sky: science with LOFAR, SKA and its pathfinders (Annual meeting of the Astronomische Gesellschaft, Heidelberg, 19.9.-23.9.)

M. Gilfanov: Multifrequency behavior of High Energy Cosmic Sources Frascati Workshop 2011 (Vulcano, Italy, 23.5-28.5) – European Week of Astronomy and Space Science JENAM-2011 (St.Petersburg, Russia, 4.7-8.7) – Binary Paths to Type Ia Supernovae Explosions IAU Symposium 281 (Padova, Italy, 3.7-8.7) – X-ray Astrophysics up to 511 keV (Ferrara, Italy, 14.9-16.9) – LOFT Science meeting (Amsterdam, The Netherlands, 26.10-28.10) – High Energy Astrophysics - 2011 (Moscow, Russia, 13.12-16.12)

T. Greif: Virgo Meeting (17.4.-21.4.) – First Galaxies Workshop, (26.6.-1.7.)

W. Hillebrandt: Advanced Topics in Astrophysics (Llafranc, Costa Brava, 4.5 -6.5.)

H.-Th. Janka: Physics of neutron stars (St. Petersburg, Russia, 11.7.–15.7.) – Explosive Ideas about Massive Stars – from Observations to Modeling (Stockholm, Sweden, 10.8.–13.8.)

G.Kauffmann: Celebrating the career of A. Wolfe, (Ringberg, Germany, 1.7-4.7) – Galaxy Formation, (Durham, UK, 18.7.-22.7.)

B. Müller: “Multi-dimensional core-collapse supernova simulations with VERTEX , Hamburg Neutrinos from Supernova Explosion (Hamburg, Germany, 19.7.-23.7.)

E. Müller: “Fusion and Astrophysical Plasmas , 478th Heraeus Seminar, (Bad Honnef, Germany, 18.4.-20.4.) – – Advanced Topics in Astrophysics , Conference, (Llafranc, Spain, 4.5.-6.5.) – – Explosive Ideas about Massive Stars - from Observations to Modeling , Conference, (Stockholm, Sweden, 10.8.-13.8.)

Th. Naab: ESO workshop: Fornax, Virgo, Coma et al.: Stellar systems in high-density environments (27.6. - 1.7.)

H. Ritter: The Golden Age of Cataclysmic Variables and Related Objects, (Palermo, Italy, 12.9.-17.9.)

H. Spruit: 218th meeting of the American Astronomical Society, (Boston MA, USA, 21.5.–26.5.) – – Annual Meeting, Solar Physics Division of the AAS, (Las Cruces NM, USA, 13.6.–17.6.) – – Nonequilibrium Dynamics in Astrophysics and Material Science (Kyoto, Japan, 31.10.–3.11.) – – Transients in Astrophysics (Hsinchu, Taiwan, 12.12.–16.12.)

R. Sunyaev: Physics of Neutron Stars - (St. Petersburg, Russia, 11.7.–15.7.) – – A new era for sz science, (Santander, Spain, 27.6.-30.6.) – – Cosmology with X-ray and Sunyaev-Zeldovich Effect Observations of Galaxy Clusters (Huntsville, USA, 19.9.–22.9.) – – High Energy Astrophysics Today and Tomorrow (Moscow, Russia, 13.12.–16.12.)

A. Weiss: 20-th Stellar Pulsation Conference, (Granada, Spain, 5.9.–9.9.)

S. White: Fine-scale structure in the dark matter distribution, (Toronto, Canada, 28.3.–30.3.) – – 8th Sino-German Workshop, (Shanghai, China, 26.4.–29.4.) – – Symposium on Dark Matter, (Baltimore, USA, 2.5.–5.5.) – – Conference on Galaxy Formation, (Durham, U.K. 18.7.–22.7.) – – International Conference on Particle Physics and Cosmology, (Porto, Portugal, 22.8.–26.8.) – – First eRosita International Conference on Mapping the Structure of the Energetic Universe, (Garmisch-Partenkirchen, Germany 17.10.–20.10.)

Kolloquiumsvorträge

R. Angulo: AIP, Postdam 2.12.

M. Asplund: ANU Canberra; 24.2.

B. Catinella: Swinburne University of Technology GEM Seminar Melbourne, Australia, 30.11.; – ASTRON-JIVE, Dwingeloo, The Netherlands, 23.06.; – Sydney, Australia, 20.11.–23.11.; – Durham, UK, 18.07.–22.07.; – HI Pathfinder Workshop, Perth, Western Australia, 02.02.–04.02.

B. Ciardi: Pisa, Italy; 07.12.

M. Dijkstra: Cambridge University, 22.2.; – Oscar Klein Center, Stockholm, 23.3.; – Geneva Observatory, Geneva, 5.4.; – Massachusetts Institute of Technology, Cambridge, MA, U.S.A, 17.5.; – Scuola Normale Superiore, Pisa, Italy, 22.11.

T.A. Enßlin: Workshop Ringberg Castle, 22.7.; – IAS Orsay, 1.12.; – Bayes Forum, MPE Garching, 12.12.

T. Greif: KIPAC Stanford 7.11.; – Columbia New York 12.11. – Harvard ITC 16.11.; – IPMU Tokio 3.8.; – Kyoto University 7.8.; – Sapporo University 12.8.p; – Tsukuba Campus 14.9.

A. Gualandris: University of Milano Bicocca, 25.3.

H.-Th. Janka: TU Darmstadt, 17.2.; – CEA/Saclay, 20.10.

G. Kauffmann: University of Western Australia; 31.1.; – Max Planck Institute for Radio Astronomy, 3.6.; – Institute for Theoretical Astrophysics, Oslo, 7.10.

M. Kromer: IAAT Tübingen; 30.05.

G. Lemson: CAS Seminar, JHU Baltimore, 8.2.

E. Müller: MPC Mainz; 25.5.

G. Ruchti: Ljubljana University; 25.5.; – Lund University; 15.09.

Öffentliche Vorträge

R. Angulo: Osorno, Chile (28.12.).

M. Asplund: Fundacion BBVA, Madrid (3.10).

G. Börner: MPA Open House, Garching (15.10.).

E. Churazov: Nürnberg Planetarium (4.12.).

T.A. Enßlin: Volkssternwarte Rosenheim (16.6).

H.-Th. Janka: DESY Hamburg (20.7.). – MPA Open House, Garching (15.10.). – Café & Kosmos, München (8.11.).

D. Kruijssen: Dutch Radio 2, NCRV Cappuccino (13.8.). – Dutch Radio 2, NCRV Cappuccino (27.8.). – Dutch Radio 1, BNN Today (29.8.).

K. Lind (contributed talk): Subaru 3rd international conference, Shuzenji, Japan (02.11.).

Z. Magic: MPA Open House, Garching (15.10.)

E. Müller: Lehrerfortbildung Dachau (7.7.). – Open House, MPA Garching (15.10.). – MPG day, MPA Garching (11.11.).

B. Müller: Volkssternwarte Winzer (9.4.)

G. Robbers: MPA Open House, Garching (15.10.)

R. Schönrich: MPA Open House, Garching (15.10.)

R. Sunyaev: John Bahcall Lecturership, USA National Air and Space Museum (21.10.). – Space Telescope Science Institute (26.10.). – Goddard Space Flight Center (27.10.).

S. White: MPA Open House, Garching (15.10.)

5.3 Kooperationen

E. Müller und H.-Th. Janka vom MPA sind mit zwei Teilprojekten am Sonderforschungsbereich/Transregio 7, “Gravitationswellenastronomie” beteiligt (Verwaltung des SFB in Jena) Der SFB beschäftigt sich hauptsächlich mit der theoretischen Modellierung der kosmischen Quellen der Gravitationsstrahlung, der Verbesserung des Detektorenkonzeptes und der Auswertung der zu erwartenden Gravitationswellensignale. (Beteiligte Institute: Univ. Hannover, Univ. Tübingen, Univ. Jena)

H.-Th. Janka hat ein Teilprojekt in dem Neutrino-Sonderforschungsbereich (TR27). Der SFB wird vom Physik-Department der TU München verwaltet. Beteiligte Institute sind: Univ. Karlsruhe, Univ. Tübingen, MPI f. Physik München, MPI f. Kernphysik Heidelberg. Nach den jüngsten Erfolgen in der Neutrinophysik greift dieser SFB zentrale Themen, sowohl im Experiment als auch in der Theorie auf.

S. White und W. Hillebrandt sind in dem Transregio TR33 “Dunkles Universum” mit Teilprojekten involviert. Beteiligte Institute sind: Univ. Heidelberg, Univ. Bonn und Ludwig-Maximilians-Univ. München.

A. Asplund, W. Hillebrandt, S. White u.v.m. Excellence Cluster Universe - Origin and Structure of the Universe - Beteiligte Institute: Ludwig-Maximilians-Univ. München, Technische Univ. München, ESO sowie die Max-Planck Institute f. Astrophysik, extraterrestrische Physik, Plasmaphysik, Halbleiterlabor Neuperlach

5.4 EU Netzwerke - 2011 aktiv:

– “Planck Surveyor” (S. White, T. Enßlin);

– LACEGAL (Latin, American, Chinese, European Galaxy Formation Network) - Projekt-

leiter am MPA: S. White. Beteiligte Institute: University of Durham, Universität Leiden, Agencia Estatal Consejo Superior De Investigaciones Cientifica, University of Sussex, University of Nottingham, Universita Degli Studi Di Trieste, Shanghai Astronomical Observatory, Consejo Nacional De Investigaciones Cientificas Y Tecnicas, Universidade de Sao Paulo, Universidad Nacional Autonoma De Mexico, Pontificia Universidad Catolica De Chile, Instituto Nacional de Astrofisica Optica y Electronica Mexico, Institute for Theoretical Studies Heidelberg, Kapteyn Institute Groningen, Niederlande.

– CosmoComp (Early Stage Training Network) - Koordinator am MPA ist S. White. (Internationales Netzwerk) Beteiligte Institute sind: Durham, Nottingham, Sussex (England); Triest (Italien), Leiden (Niederlande), Barcelona (Spanien), Shanghai (China) und Buenos Aires, (Argentinien). Computer simulationen zum besseren Verständnis des frühen Universums.

5.5 Andere Netzwerke

DAAD - Projektbezogener Personenaustausch mit Tschechien (Projektleiter am MPA: Markus Kromer)

6 Veröffentlichungen

6.1 In Zeitschriften und Büchern

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