

Garching

Max-Planck-Institut für Astrophysik

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1 Personal und Ausstattung

1.1 Personalstand

Direktoren:

W. Hillebrandt, R. Sunyaev (Geschäftsführung), S.D.M. White.

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:

M.A. Aloy, A. Arbey (seit 1.9.), A.J. Banday, M. Bartelmann (bis 30.9.), G. Börner, S. Charlot, E. Churazov, L. Dessart, H. Dimmelmeier, K. Dullemond, T. Enßlin, M. Gilfanov, S. Heinz (bis 30.9.), S. Inoue, H.-T. Janka, G. Kauffmann, K. Kifonidis, C. Kobayashi, W.P. Kraemer (bis 30.9.), F. Kupka (seit 1.10.), A. Merloni, H.J. Mo (bis 30.4.), E. Müller, S. Nayakshin, R. Oechslin (seit 1.4.), P. Popowski, M. Rampp (bis 28.2.), M. Reinecke, M. Revnivtsev, H. Ritter, F. Röpke (seit 1.7.), G. Rudnick, S. Sazonov, V. Springel, H.C. Spruit, C. Travaglio (bis 30.9.), F. van den Bosch (bis 30.9.), A. Weiß, S. Zaroubi.

Sofja Kovalevskaja Programm

J. Brinchmann, S. Charlot (Preisträger), C. Möller.

DAAD-Stipendiat:

C. Scannapieco (IAFE, Argentina) 1.9.–31.12.

Alexander von Humboldt Stipendiaten:

Xu Kong (USTC, China, bis 31.10.), Bifang Liu (seit 1.7.)

EU-Stipendiaten

N. Bouche (seit 1.9.), B. Ciardi, S. Cora (bis 30.9.), A. Ferguson (seit 10.2.), D. Giannios (bis 30.9.), C. Hernandez-Monteagudo, F. Miniati, P. Ocvirk (seit 1.10.), J.A. Rubiño-Martín, A. Serenelli (1.2.–31.7.), A. Wozna (bis 30.9.).

Doktoranden:

R. Barmina (bis 31.8.), K. Basu (IMPRS), S. Bertone (IMPRS), J. Braithwaite (TMR), A. Büning (bis 31.10.), R. Buras (DFG), J. Chluba (IMPRS), D. Croton (IMPRS, seit 15.7.), J. Cuadra (IMPRS), G. DeLucia (IMPRS), M. Flaskamp (bis 30.1.), A. Gallazzi (IMPRS, seit 1.2.), L. Gao (IMPRS), H.-J. Grimm (bis 30.8.), P. Hultzsich, G. Hütsi (IMPRS), L. Iapichino (TMR), T. Jaffe (IMPRS, seit 1.9.), M. Jubelgas (IMPRS), M. Kitzbichler (TMR), T. Leismann, G. Liang (IMPRS), B. Menard (bis 30.4.), P. Mimica (IMPRS), A. Nickel, C. Pfrommer, P. Rebusco (IMPRS, seit 1.10.), F. Röpke (bis 30.6.), D. Sauer (DFG), B. M. Schäfer, L. Scheck, W. Schmidt (DFG), M. Stehle, F. Stoehr (bis 31.7.), M. Stritzinger (IMPRS), L. Tasca (IMPRS), C. Vogt (IMPRS), R. Voss (IMPRS, seit 1.5.), S. Zibetti (IMPRS), B. Zink (DFG, seit 1.4.).

Diplomanden:

A. Arcones, T. Behrens (bis 28.2.), M. Gieseler (seit 1.3.), V. Heesen (bis 30.3.), F. Kitaura, A. Marek, M. Obergaulinger (seit 1.6.), S. Taubenberger (seit 1.11.), O. Zahn (bis 30.4.).

Sekretariat und Verwaltung:

C. Rickl [Sekr. Geschäftsführung, -2201]

M. Ihle [Verwaltungsleiter, -3600]

1.2 Personelle Veränderungen

M. Bartelmann: Ruf auf C4-Lehrstuhl für Theoretische Astrophysik, Universität Heidelberg; angenommen

A. Ferguson: Annie Jump Cannon Preis in Astronomie für 2003 erhalten.

W. Krämer: zum 1.11. ausgeschieden.

J. Niemeyer: Ruf auf C3-Lehrstuhl für Theoretische Physik und Astrophysik, Universität Würzburg; angenommen

R. Sunyaev: bekam den Dannie-Heineman-Preis für Astrophysik 2003 und Kosmologie-Preis der Peter-Gruber-Stiftung 2003.

2 Gäste

G. Bruzual, (Mérida, Venezuela), 1.10.–31.10.; S. Blinnikov, (ITEP, Moskau), 15.9.–31.10.; D. Chen, (Shanghai, China), seit 4.10.; R. Chang, (Shanghai, China), seit 20.11.; J. Comerford, Univ. of California, Berkeley U.S.A., 15.6.–13.8.; R.A.C. Croft, (Carnegie Mellon Univ. U.S.A.), 1.6.–30.6.; Z.G. Deng, (Beijing, China), 25.6.–21.9.; P. Denissenkov, (Victoria, Kanada), 1.9.–1.10.; S. Grebenev, (Moskau, Rußland), 6.11.–6.12.; L. Girardi, (Triest, Italien), 4.10.–3.11.; C. Halliday, (Padova, Italien), 1.1.–30.4.; P. Heinzl, (Ondrejov, Tschechei), 1.–16.5.; L. Hernquist, (CfA Harvard, USA), 23.6.–22.7.; C.J. Horowitz, (Indiana, USA), 1.9.–30.9.; Y. Hou, (Shanghai, China), 1.3.–31.5.; A. Janiuk, (Warsaw, Polen), 10.11.–10.12.; N. Inogamov, (Moskau, Rußland), 5.5.–5.6. und 6.10.–30.11.; Y.P. Jing, (Shanghai, China), 2.4.–11.6.; X. Kang, (Shanghai, China), seit 5.10.; V. Kelló, (Bratislava, Slowakei), 04.08.–31.08.; I. Kryukov, (Moskau, Rußland) 1.–31.7.; G. Li, (Shanghai, China), seit 5.10.; A. Lutovinov, (Schweiz), 28.5.–27.6.; P. Marigo, (Padua, Italien), 4.10.–3.11.; M. Matturi, (Padua, Italien), seit 1.10.; P. Mazzali, (Trieste, Italien), 26.5.–13.7.; D. Nadyozhin, (ITEP, Moskau), 1.4.–30.4.; M. Pieri, (Blackett Lab. London, England), 1.10.–30.12.; T. Plewa, (Chicago, USA), 5.4.–3.5.; S. Recchi, (Univ. Kiel), seit 13.9.; P. Ruiz-Lapuente, (Barcelona, Spanien), 27.3.–26.5.; M. Salaris, (Liverpool, England), 11.7.–11.8.; A. Serenelli, (La Plata, Argentinien), 1.2.–1.8.; N. Shakura, (Moskau, Rußland), 1.9.–30.9.; Z. Shao, (Shanghai, China), bis 22.1.; S. Shen, (Shanghai, China), 1.1.–31.12.; P. Shtykovskii, (Moskau, Rußland), 26.7.–5.9. und 10.11.–20.12.; C. Shu, (Shanghai, China), until 31.1.; E. Sorokina, (ITEP, Moskau), 15.9.–31.10.; A. Tolstov, (ITEP, Moskau),

15.9.–15.10.; M. Urban, (Bratislava, Slowakei), 04.08.–31.08.; V. Utrobin, (ITEP, Moskau), 1.11.–31.12.; W. Weinzierl, (Berlin), 1.5.–30.6.; X.Y. Xia, (Tianjin, China), 25.6.–21.9.; S. Yamamoto, (Nagoya, Japan), 26.07.–07.09.; Y. Zhang, (Beijing, China), 1.19.–31.10.; D. Zhao, (Shanghai, China), 1.3.–31.5.

3 Lehrtätigkeit, Prüfungen und Gremientätigkeit

3.1 Lehrtätigkeiten

G. Börner, WS02/03, LMU München

W. Hillebrandt: WS 2002/3, WS 2003/4, TU München

H.-Th. Janka, WS02/03 und SS03, TU München

E. Müller, SS03 and WS03/04, TU München

H. Ritter, WS 2002/03, SS 2003, WS 2003/04

A. Weiss, WS02/03 und WS03/04, Universität Augsburg

3.2 Gremientätigkeit

T. Bandy: Mitglied von IDIS-Arbeitsgruppe für das ESA-Planck-Satellit-Projekt. Planck-Koordinator für die Technische Arbeitsgruppe (WT 1.7) on „Methods for detection of systematics“. Planck-Koordinator für die Technische Arbeitsgruppe (WT 4.1) on „Effect of systematics on Non-Gaussianity“. Planck-Teilkordinator (WT 5.5.4) on the „Integrated Sachs-Wolfe Effect“. Planck-Koordinator für die Technische Arbeitsgruppe (WT 7.4) on „Simulation and analysis tools for polarised galactic emission“. Mitorganisator des EU-TMR-Netzwerks CMBNet working group on „Large data set analyses“. Mitglied von OPTICON-Arbeitsgruppe „Interoperability“. Mitglied von der wissenschaftlichen Arbeitsgruppe für „Astrophysical Virtual Observatory“ (AVO).

M. Bartelmann: Mitglied des „Planck-IDIS Entwicklungsteam“. Hubble Space Telescope, Time Allocation Committee, Extragalactic Astronomy Panel.

S. Charlot: Mitglied des „HST Cycle 12 TAC Galaxy Panel“. Mitglied des „VLT/VIRMOS-Wissenschaftsteam“. Mitglied des „GALEX-Wissenschaftsteam“.

E. Churazov: Mitglied des „Chandra AO-5 peer review“. Mitglied des „INTEGRAL AO-2 peer review“.

G. H. F. Dierksen: Deutscher Delegierter, COST Technical Committee „Telecommunication, Information Science and Technology“. Vorsitzender, COST Action 282 „Knowledge Exploration in Science and Technology“. Wissenschaftlicher und Technischer Koordinator, EC 5th Framework IST Project „Open Computing GRID for Molecular Science and Engineering – OpenMolGRID“.

T.A. Enßlin: Mitglied des „Planck-IDIS Development Team“.

A. Ferguson: Mitglied des „National Science Foundation Panel Review“.

W. Hillebrandt: Coordinator, Research Training Network „The Physics of Type Ia Supernovae“. Fachbeirat, MPI für Gravitationsphysik, Golm. Vorsitzender, Beirat des Rechenzentrums Garching. Stellvertretender Sprecher des Sonderforschungsbereichs 375 „Astro-Teilchen Physik“ (TU). Herausgeber, Lecture Notes in Physics. Herausgeber, Encyclopedia of Astronomy and Astrophysics. Vorsitzender der IAU Supernova-Arbeitsgruppe. Mitglied, DFG Senat Komitee on Collaborative Research Centres.

E. Müller: Beauftragter MPA im Benutzerausschuß des Rechenzentrums Garching (RZG). Mitglied des Wissenschaftlichen Organisationskomitees der Internationalen Konferenz on „Virtual Astrophysical Jets“, Dogliani, (2.10.–4.10.).

P. Popowski: Mitglied von GAIA satellite-Arbeitsgruppe (variable stars, scientific alerts).

H.C. Spruit: Mitglied Fachbeirat Instituto de Astrofísica de Canarias. Mitglied des Redaktionsteams, Solar Physics journal. EARA-Gremium.

R. Sunyaev: Mitglied des Space Council of Russian Academy of Sciences. Mitglied des Scientific Council of Russian Space Research Institute (IKI). Mitglied der INTEGRAL wissenschaftlichen Arbeitsgruppe und „Russian Project Scientist for INTEGRAL“ (ESA project). Stellvertretender Vorsitz des SPECTRUM-X space project. International Scientific Committee. Co-I of the HFI instrument of ESA PLANCK SURVEYOR project. Leiter für Deutschland im TMR Network „CMBNET“. Mitglied des NOVA International Advisory Board. Mitglied des Evaluation Committee for SISSA.

S. White: Mitglied des Perspektivenkommission des CPT Sektions der MPG. Vorsitzender des Gremiums, European Association for Research in Astronomy. Mitglied des Kuratoriums, Physik Journal. Mitglied des Fachbeirats, Observatory of Lyon. Mitglied des Haut Comite Scientifique, Observatoire de Paris. Mitglied einer C3-Berufungskommission, Universität Basel. Mitglied des Fachbeirats, MPA Partner Group at the Shanghai Observatory. Mitglied des Fachbeirats, MPI für Astronomie, Heidelberg. Mitglied des Advisory Council, Sloan Digital Sky Survey. Panel Mitglied, ESO Observational Programme Committee. Mitglied des Fachbeirats, Instituto de Astrofísica de Canarias.

4 Wissenschaftliche Arbeiten

Für Informationen zu den wissenschaftlichen Arbeiten unseres Instituts besuchen Sie bitte unsere Webseite unter: www.mpa-garching.mpg.de und klicken Sie „Publications“ „Annual Report 2003“ an. Sollten Sie kein Internet haben, können Sie gerne kostenlos einen Jahresbericht unter der Telefon-Nummer 089/30000-2214 anfordern. In unserem Jahresbericht 2003 sind folgende wissenschaftlichen Aktivitäten in englischer Sprache ausführlich beschrieben:

- 4.1 Stellare Physik
- 4.2 Nukleare und Neutrino-Astrophysik
- 4.3 Numerische Hydrodynamik
- 4.4 Hochenergie-Astrophysik
- 4.5 Akkretion
- 4.6 Wechselwirkung von Strahlung mit Materie
- 4.7 Galaxienentwicklung und intergalaktisches Medium
- 4.8 Großräumige Strukturen von $z = 0$ bis zum Urknall
- 4.9 Gravitationslinseneffekt
- 4.10 Untersuchungen des kosmischen Mikrowellenhintergrunds
- 4.11 Quantenmechanik von Atomen und Molekülen, Astrochemie

5 Diplomarbeiten, Dissertationen, Habilitationen

5.1 Diplomarbeiten

Abgeschlossen:

A. Arcones: „Studies of neutrino-heating and shock-revival phase in a supernova core by using an analytic toy model“; Technische Universität, München.

T. Behrens: „Lichtkurven-Systematik von Typ Ia Supernovae im Falle gemischter Explosionsklassen“; Technische Universität, München.

F. Kitaura: „Hydrodynamical simulation of the stellar collapse of O/Ne/Mg cores with Boltzmann neutrino transport“; Technische Universität, München.

A. Marek: „The effects of the nuclear equation of state on core collapse and supernova evolution“; Technische Universität, München.

5.2 Dissertationen

Abgeschlossen:

R. Banerjee: „Evolution of primordial magnetic fields in the early universe“; Ludwig-Maximilians-Universität, München.

A. Büning: „Langzeitentwicklung kompakter Doppelsternsysteme mit Bestrahlungsrückkopplung“; Ludwig-Maximilians-Universität, München.

M. Flaskamp: „Nichtlokale und zeitabhängige Konvektion in Sternen“; Technische Universität München.

H.-J. Grimm: „X-ray in the Milky Way and other galaxies“; Ludwig-Maximilians-Universität, München

A. M. Lisewski: „Turbulent Combustion in Type Ia Supernovae“; Technische Universität, München

B. Menard: „Cosmic Magnification“; University of Paris.

F.K. Röpkke: „On the Stability of Thermonuclear Flames in Type Ia Supernovae Explosion“; Technische Universität, München.

S. Shen: „The statistical research of the size distribution of galaxies“; Graduate School of Chinese Academy of Sciences.

F. Stoehr: „Simulations of Galaxy Formation and Large Scale Structure“; Ludwig-Maximilians-Universität, München.

Laufend:

K. Basu: „Formation and Growth of Supermassive Black Holes“; Ludwig-Maximilians-Universität; München.

S. Bertone: „Chemical Enrichment of the Intergalactic Medium by Galactic Winds“.

J. Braithwaite: „Evolution of strong magnetic fields in stars“; Universität Amsterdam.

R. Buras: „Zweidimensionale Simulationen von Typ II Supernovae mit Boltzmanntransport“; Ludwig-Maximilians-Universität; München.

J. Cuadra: „Two-phase accretion in AGN and our Galactic Center region“.

J. Chluba: „Energy release in the early universe and distortions of the CMB energy spectrum“; Ludwig-Maximilians-Universität; München.

C. Cramphorn: „Physical processes in galactic and extragalactic superluminal radio sources“; Ludwig-Maximilians-Universität; München.

D. Croton: „The Star Formation History of the Local Group“; Ludwig-Maximilians-Universität; München.

G. De Lucia: „Evolution of galaxies in clusters“; Ludwig-Maximilians-Universität; München.

P. Hultsch: „Spektraldiagnostik von Supernovae Ia in den späten Phasen“; Ludwig-Maximilians-Universität; München.

G. Hütsi: „Superclustering and Secondary CMB Anisotropies“; Ludwig-Maximilians-Universität; München.

T. Jaffe: „Using phase analysis to detect non-Gaussianity in the cosmic microwave background radiation“; Ludwig-Maximilians-Universität; München.

- M. G. Kitzbichler: „Galaxy Formation Modelling in the Millennium Simulation“; Ludwig-Maximilians-Universität; München.
- T. Leismann: „Numerical Simulations of Parsec Scale Jets and Jet Formation“ Technische Universität München.
- G. Liang: „Simulation of Lyman alpha forest“ Ludwig-Maximilians-Universität; München.
- P. Mimica: „Modellierung von nicht-thermischen Strahlungsprozessen in speziell-relativistischen Strömungen“; Ludwig-Maximilians-Universität; München.
- A. Nickel: „Statistischer Linienstrahlungstransport in den Winden massereicher Sterne“; Ludwig-Maximilians-Universität; München.
- C. Pfrommer: „Development of semi-analytic models for cluster of galaxies“; Ludwig-Maximilians-Universität; München.
- N. Przybilla: „Quantitative Spectroscopy of Supergiants“; Ludwig-Maximilians-Universität; München.
- P. Rebusco: „The impact of supermassive black holes in elliptical galaxies and clusters“; Ludwig-Maximilians-Universität; München.
- D. Sauer: „NTLE models and synthetic spectra of Type Ia Supernovae at maximum light“; Technische Universität München.
- B. M. Schäfer: „Detection of galaxy clusters by gravitational lensing, X-ray emission and the SZ-effect“.
- L. Scheck: „Numerische Simulationen von Typ II - Supernovae“; Technische Universität München.
- W. Schmidt: „Turbulente thermonukleare Verbrennung in Sternen“; Technische Universität München.
- M. Stehle: „Analyse der Lichtkurven und Spektren von Typ Ia Supernovae“; Ludwig-Maximilians-Universität; München.
- M. Stritzinger: „Calibrations of Type Ia Supernovae Lightcurves“; Ludwig-Maximilians-Universität; München.
- L. Tasca: „Structural properties of galaxies“; Ludwig-Maximilians-Universität; München.
- C. Vogt: „Untersuchungen von Faradayrotationskarten ausgedehnter Radioquellen zur Magnetfeldbestimmung in Galaxienhaufen“; Ludwig-Maximilians-Universität; München.
- R. Voss: „X-ray binaries in elliptical galaxies“; Ludwig-Maximilians-Universität; München.
- S. Zibetti: „Low surface brightness features of galaxies and diffuse intracluster light detection in the SDSS“; Ludwig-Maximilians-Universität; München.
- B. Zink: „Gravitational waves from black hole formation“; Ludwig-Maximilians-Universität; München.

6 Tagungen, Projekte am Institut und Beobachtungszeiten

6.1 Tagungen und Veranstaltungen

- M. Bartelmann: „German-American Frontiers of Science“ (Irvine, 05.06.–07.06.)
- S. Charlot, J. Brinchmann, G. Kauffmann and A. Weiss: „Stellar Populations“ (Garching, Germany, 6.10.–10.10.)
- E. Churazov: Workshop „High Energy Astrophysics 2003“ (Moskau, 24.12.–26.12.)
- W. Hillebrandt: „The Physics of Type Ia Supernova Explosions“, RTN Workshop and School, Schloß Ringberg (Tegernsee, 10.–15.3.)

W. Hillebrandt: „Thermonuclear Supernovae and Cosmology“, ECT*/RTN Workshop and School, ECT*, Trento, Italien, 22.9.–4.10.

G.Kauffmann: IAU Symposium 216 „Maps of the Cosmos“ Sydney, Australia (14.7.–17.7.)

A. Weiss: „First Stars II“, State College, USA (29.–31.5.)

6.2 Beobachtungszeiten

E.M. Burbidge (UCSD), H.C. Arp, V. Junkkarinen (UCSD): 02.10, Keck 10 meter telescope, Mauna Kea, Hawaii, LRIS, Spectra of ULX/quasars near galaxy nuclei;

R. Canal (U. Barcelona), et al. (The European Supernova Collaboration): Tenerife, TCS, 8 nights, ToO, Monitoring of nearby type Ia supernovae.

S. Chapman (CalTech), R. Ibata (Strasbourg), G. Lewis (Sydney), M. Irwin (Cambridge), A. Ferguson (MPA), N. Tanvir (Herts): 21.09-23.09, Keck Observatory, Mauna Kea, Hawaii, DEIMOS, A Dynamical Survey of Andromeda: Uncovering Fossils from the Formation Epoch of a Spiral Galaxy

T.E. Clarke (Charlottesville), J. Bagchi (Pune), T.A. Enßlin, N.E. Kassim (Washington): 5.9.–7.9., Giant Meterwave Radio Telescope, Pune, India, 04TCA01, Probing Large Scale Structure Formation along Galaxy Filaments

E. Daddi (ESO), B. Ciardi (MPA), A. Cimatti (Arcetri), S. di Serego Alighieri (Arcetri), A. Ferrara (SISSA), A. Renzini (ESO), T. Broadhurst (HUIJ), N. Benitez (JHU): ESO, Paranal, Chile, VLT, ISAAC+FORIS2, 37h in service mode Probing the Reionization Epoch: a Search for Primordial Galaxies at $6.5 < z < 7.5$;

L. Dessart, S.P. Owocki (Univ. Delaware): 18.6.–20.6., ESO, La Silla, Chile, NTT, EMMI, Dynamics and structure of hot star winds;

T.E. Enßlin, T. Erben (Bonn): 5.8. ESO, La Silla, Chile, WFI at 2.2m Telescope, 071.A-9010A, Weak lensing observation of the peculiar galaxy filament ZwCl 2341.1+0000

A. M. N. Ferguson (MPA), A. Cole (Groningen), R. Ibata (Strasbourg), M. Irwin (Cambridge), G. Lewis (Sydney), T. Smecker-Hane (Irvine), N. Tanvir (Herts): GO 9837 (24 orbits), Hubble Space Telescope, ACS Stellar Populations in the Outskirts of M33: A Unique Probe of Disk Galaxy Formation

W. Hillebrandt (MPA), et al. (The European Supernova Collaboration): Calar Alto, Spain, 2.2m (30 nights) and 3.5m (6 nights), ToO, Monitoring of nearby type Ia supernovae.

R. Ibata (Strasbourg), S. Chapman (CalTech), A. Ferguson (MPA), M. Irwin (Cambridge), G. Lewis (Sydney), N. Martin (Strasbourg), A. McConnachie (Cambridge), M. Segall (Strasbourg), N. Tanvir (Herts): 13.0 hours, Canada France Hawaii Telescope, Mauna Kea, Hawaii, MegaCam, Quantifying the Structure and Substructure of the Outer Halo of the Andromeda Galaxy

S. Inoue (MPA), W. Aoki, S. Kawamamoto (NAOJ), S. Ryan (Open Univ.), T. K. Suzuki, M. Chiba (NAOJ): 21.2.–23.2., Subaru Telescope, Mauna Kea, Hawaii, High Dispersion Spectrograph, High Resolution Spectroscopic Measurement of ${}^6\text{Li}$ in metal-poor stars as fossil record of structure formation in the early Galaxy.

M. Irwin (Cambridge), A. McConnachie (Cambridge), R. Ibata (Strasbourg), N. Tanvir (Herts), G. Lewis (Sydney), B. Conn (Sydney), A. Ferguson (MPA): 29.08-04.09, Isaac Newton Telescope, La Palma, Wide Field Camera, Probing the Spatial Distribution and Structure of the Monoceros Ring.

P. Meikle (Imp. College London), et al. (The European Supernova Collaboration): La Palma, WHT, 60 hours, ToO, Monitoring of nearby type Ia supernovae.

P. Meikle (Imp. College London), et al. (The European Supernova Collaboration): Hawaii, UKIRT, 48 hours, ToO, Monitoring of nearby type Ia supernovae.

P. Ruiz-Lapuente (U. Barcelona), et al. (The European Supernova Collaboration): La Palma, NOT and other telescopes, 12 nights, ToO and scheduled, Monitoring of nearby type Ia supernovae.

S. Yu. Sazonov: 3.12., INTEGRAL (International Gamma-Ray Astrophysics Laboratory, European Space Agency, Broad-band spectroscopy of GRB prompt and early afterglow emission (GRB 031203).

T. Smecker-Hane (Irvine), M. Hood (Irvine), M. Teig (Irvine), A. Ferguson (MPA), M. Irwin (Cambridge): 17.10-18.10, Keck Observatory, Mauna Kea, Hawaii, DEIMOS, Investigating the Kinematics and Chemical Abundances of the Stellar Populations in M33

H.C. Spruit, G. Kanbach (MPE) 27.5.-3.6.: Radcliffe telescope, South African Astronomical Observatory, Sutherland, ZA, Coordinated high-speed X-ray/Optical observations of X-ray binaries.

M. Turatto (Padua Observ.), W. Hillebrandt (MPA), et al. (The European Supernova Collaboration): ESO, La Silla, NTT, 3.6m, 2.2m, 54h per semester, ToO, Monitoring of nearby type Ia supernovae.

C. Vogt, T. Clarke (Charlottesville), T. Enßlin, H. Röttgering (Sterrewacht Leiden): 26.1., Westerbork Synthesis Imaging Telescope, Netherland, High quality rotation measure maps of strong cluster radio sources;

C. Vogt, T. Clarke (Charlottesville), T. Enßlin: 11.4., 19./20.4., 21./22.4., Very Large Array, New Mexico, USA, Faraday rotation measure of extended radio sources.

7 Auswärtige Tätigkeiten

7.1 Vorträge und Gastaufenthalte

H. Arp: „Ejection from Active Galaxies“, Manchester Astronomical Society, (England, 22.11.)

H. Arp: Conference on Cosmology, Univ. (Pavia, Italien, 22.–23.6.)

H. Arp: Science and Democracy, (Naples, Italien, 11.–12.6)

M. Bartelmann: „Numerical Methods in Gravitational Lensing“ (Aussois, 05.01.–08.01.)

G. Börner: „The Three-point Correlation Function of the Galaxy distribution“ (Univ. of Tokyo, 06.11.)

G. Börner: Workshop on „Atomic clocks and fundamental constants“ (Bad Honnef, 16.6.)

S. Charlot: MPA/MPE/ESO Conference „Stellar Populations“ (Garching, 6.10.–10.10.)

E. Churazov: Conference „The Riddle of Cooling Flows in Galaxies and Clusters of Galaxies“, (Charlottesville, USA 31.5.–04.06.)

E. Churazov: Workshop „Fundamental Atomic Spectroscopy“, (Zvenigrad, Rußland 1.12.–5.12.)

E. Churazov: Workshop „High Energy Astrophysics 2003“, (Moskau, Rußland 24.12.–26.12.)

B. Ciardi: Workshop „Workshop on the Topology of Reionization“ (Tucson, 20.3.–22.3.)

T. Di Matteo: University of California, Physics & Astronomy Colloquium „Black hole growth and activity throughout cosmic history“ (Irvine, USA, 27.2.)

T. Di Matteo: The Tenth Marcel Grossmann Meeting on General Relativity „Black Holes and Galaxy Formation“ (Rio de Janeiro, Brazil, 20.7.–26.7.)

H. Dimmelmeier: Tenth Anniversary of The Center for Gravitational Physics and Geometry, „Gravitation: A Decennial Perspective“, 1993 – 2003 Penn State University, State College (PA, U.S.A., 8.6.–12.6.)

- M. Gilfanov: „Stellar-Mass, Intermediate-Mass, and Supermassive Black Holes“ (Kyoto, Japan, 28.10.–21.10.)
- M. Gilfanov: „High Energy Astrophysics 2003“ (Moskau, Rußland, 24.12.–25.12.)
- H.-J. Grimm: Frascati Workshop 2003 „Multiwavelength Behaviour of High Energy Cosmic Sources“ (Vulcano, 24.05.–31.05.)
- S. Heinz: „Particle Acceleration in Astrophysical Objects“ (Cracow, Poland, 24.6.–28.6.)
- S. Heinz: „Cooling Flows in Galaxies and Clusters of Galaxies“ (Charlottesville, VA, USA, 31.5.–4.6.)
- W. Hillebrandt: The Physics of Supernova Explosions (Ringberg Castle, Germany, 10.3.–15.3.)
- W. Hillebrandt: IAU Symposium 192 „Supernovae“ (Valencia, Spain, 22.4.–26.4.)
- W. Hillebrandt: Workshop on Supernovae and Dust (Paris, France, 16.5.–17.5.)
- W. Hillebrandt: The Future Astronuclear Physics (Brussels, Belgium, 20.8.–22.8.)
- W. Hillebrandt: Thermonuclear Supernovae and Cosmology (Trento, Italien, 22.9.–4.10.)
- W. Hillebrandt: Ten Years of ECT*: Achievement and Vision (Trento, Italien, 11.10.–12.10.)
- H.-Th. Janka: IAU 25th General Assembly (Sydney, 13.7.–26.7.)
- H.-Th. Janka: International Conference „The Future Astronuclear Physics“ (Brussels, 20.8.–22.8.)
- H.-Th. Janka: Workshop „Astroteilchenphysik in Deutschland“ (Karlsruhe, 16.9.–18.9.)
- H.-Th. Janka: IAU Colloquium 192 (Valencia, Spain, 22.4.–26.4.)
- H.-Th. Janka: Universitätsseminar über aktuelle Themen aus Kosmochemie und Astrophysik (Mainz, 27.1.)
- H.-Th. Janka: Universitätsseminar (Aarhus, Denmark, 14.5.)
- H.-Th. Janka: Seminar am Forschungszentrum (Karlsruhe, 2.12.)
- H.-Th. Janka: Workshop on Numerical Methods for Multidimensional Radiative Transfer Problems (Heidelberg, 24.9.–26.9.)
- G. Kauffmann: Carnegie Observatories Centennial Symposium III: „Clusters of Galaxies: Probes of Cosmological Structure and galaxy Evolution“ (Pasadena, 26.1.–31.1.)
- G. Kauffmann: „Physical Cosmology“ (Blois, 15.6.–20.6.)
- G. Kauffmann: IAU Symposium 216 „Maps of the Cosmos“ (Sydney, 14.7.–17.7.)
- G. Kauffmann: „From First Light to the Milky Way“ (Zürich, 18.8.–22.8.)
- G. Kauffmann: „Multiwavelength Mapping of Galaxy Evolution“ (Venice, 13.10.–16.10.)
- A. Merloni: „A fundamental plane of black hole activity“ (Amsterdam, 29.8.)
- F. Miniati: „Modeling the Intergalactic and Intracluster Medium“ (Vulcano, 1.10.–4.10.)
- F. Miniati: „GLAST-LAT International Collaboration Meeting“ (Rome, 15.9.–18.9.)
- F. Miniati: „Science with 5@5“ (Ringberg Castle, 10.11.–15.11.)
- E. Müller: RTN Workshop and Winter School on “The Physics of Type Ia Supernova Explosions“ (Ringberg Castle, 10.3.–15.3.)
- E. Müller: Workshop on “The Physics of Compact Stellar Objects“ (Valencia, 8.9.–11.9.)
- E. Müller: 27th Spanish Relativity Meeting on “Gravitational Radiation“ (Alicante, 11.9.–13.9.)
- E. Müller: International Conference on “Virtual Astrophysical Jets“ (Dogliani, 2.10.–4.10.)

- P. Popowski: International Conference „Gravitational Lensing: A Unique Tool For Cosmology“ (Aussois 5.1.–11.1.).
- G. Rudnick: Astron. Seminar, „Bright Lights, Big City: The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass density to z 3“, New York University, (New York, U.S.A., 8.1.)
- G. Rudnick: Astron. Seminar, „Bright Lights, Big City: The Rest-Frame Optical Luminosity Density, Color, and Stellar Mass density to z 3“, University of Wisconsin, (Madison, U.S.A., 15.1.)
- G. Rudnick: „The Formation and Evolution of Galaxies“ conference, „The Cosmically Averaged Universe to z 3“, (Kloster Irsee, 3.7.)
- G. Rudnick: Astron. Seminar, „The Cosmically Averaged Universe to z 3“, (Heidelberg, 20.11.)
- V. Springel: „Multiwavelength Cosmology“ (Mykonos, Greece, 17.6.–20.6.)
- V. Springel: IAU Symposium 220 „Dark Matter in Galaxies“ (Sydney, Australia, 21.7.–25.7.)
- V. Springel: Workshop „Galaxy Formation: A Herculean Challenge“ (Banff, Canada, 1.11.–6.11.)
- V. Springel: Workshop „Computational Cosmology and Astrophysics“ (Courant-Institute, New York, USA, 15.11.)
- H.C. Spruit: Conference on X-ray Bursts; Institute for Advanced Study, (Princeton, 11.–15.3.)
- H.C. Spruit: Solar Physics Division American Astronomical Society (Baltimore, 17.–22.6.)
- H.C. Spruit: Conference on High-Energy Astrophysics (Cracow, 23.–29.6.)
- H.C. Spruit: GRB minisymposium, JENAM (Budapest, 28.–31.8.).
- R. Sunyaev: 25 General Assembly of the IAU, Joint Discussion 18, „Quasar Cores and Jets“, (Sydney, 13.7.–26.7.)
- R. Sunyaev: IAU Symposium 216 „Maps of the cosmos“, Gruber Cosmology Prize lecture, Hot gas in clusters of galaxies, (Sydney, 13.7.–26.7.)
- R. Sunyaev: Villa Mondragone International School on Gravitation and Cosmology „The Polarization of the Cosmic Microwave Background“, (6.9.–11.9.)
- R. Sunyaev: Workshop 'Cosmology with Sunyaev-Zel'dovich Surveys', (University of Chicago, 17.9.–20.9.)
- R. Wegmann: „X-rays in the Solar System, (Leiden, The Netherlands 7.–9.4.)
- A. Weiss: „Stellar Population Synthesis“ (Garching, 6.10.–10.10.)
- A. Weiss: Joint Discussion 4 at the XXVth General Assembly of the IAU „Astrophysical impact of abundances in globular cluster stars“ (Sydney, Australien, 16.7.–17.7.)
- S. White: 3rd Carnegie Symposium, Clusters of Galaxies (Pasadena, 12.10.–19.10.)
- S. White: Satellites and Tidal Streams, (La Palma, 26.5.–30.5.)
- S. White: 2nd Annual Thinkshop, (Potsdam, 12.6.–15.6.)
- S. White: IAU Symposium No. 211, Maps of the Cosmos, (Sydney, 14.8.–25.8.)
- S. White: IAU Joint Discussion No. 8, Virtual Observatory, (Sydney, 14.8.–25.8.)
- S. White: IAU Joint Discussion No. 10, Clusters of Galaxies, (Sydney, 14.8.–25.8.)
- S. White: IAU Symposium No. 220, Dark Matter in Galaxies, (Sydney, 14.8.–25.8.)
- S. White: Star and Structure formation, (Zürich, 18.8.–22.8.)

S. White: Multiwavelength Mapping of Galaxy Formation, Evolution, (Venice, 13.10.–16.10.)

7.2 Kolloquiums-Vorträge

M. Bartelmann: Physikalische Kolloquien (SISSA, Trieste, 13.01.–15.1.); (IAP, Paris, 24.1.) und (Universität Tübingen, 09.5.); (Universität Essen, 22.10.); (Magnus-Haus, Berlin, 10.11.) und (Universität Stuttgart, 11.11.).

G. Börner: Physikalisches Kolloquium, (Universität Augsburg, 19.2.).

B. Ciardi: Università dell'Insubria (Como, 27.3.).

B. Ciardi: Università la Sapienza (Rome, 17.10.).

W. Hillebrandt: Physikalisches Kolloquium, (Ulm, 10.11.).

E. Müller: Physikalisches Kolloquium (Würzburg, 7.4.) und Physical Colloquium (Bonn, 4.7.).

V. Springel: Astrophysikalisches Kolloquium (Bonn, 28.3.); (New York University, USA, 14.11.) und (Turino, Italien, 2.12.).

R. Sunyaev: Special Invited lecture, (University of Tokyo, Japan 12.6.)

R. Sunyaev: Invited lecture, ISAS, Tokyo, (University of Tokyo, Japan 11.6.)

R. Sunyaev: Institute for Advanced Study, Princeton, Colloquium, (Princeton, 23.9.)

R. Sunyaev: Harvard-Smithsonian Center for Astrophysics, Special Seminar, (Harvard, 25.9.)

R. Sunyaev: Special Invited lecture, Institute of Theoretical and Experimental physics, (Moscow, 8.10.)

A. Weiss: Astronomisches Kolloquium, (Heidelberg, 24.6.).

S.D.M. White: Physikalisches Kolloquium, (ENS Lyon, 26.3.).

S.D.M. White: Sackler Lecture, (Princeton University, 3.4.).

S.D.M. White: Astronomisches Kolloquium, (Bochum 7.6.)

S.D.M. White: Abendvortrag fuer Graduiertenkolleg, (Blaubeuren 1.10.).

S.D.M. White: Physikalisches Kolloquium, (Göttingen 3.11.).

7.3 Öffentliche Vorträge

M. Bartelmann: Studium Generale, Tübingen (13.5.)

M. Bartelmann: Volkshochschule Ingolstadt (9.10.)

G. Börner: LMU München, Seniorenstudium (27.1.)

G. Börner: EBZ Otzenhausen (8.4.)

G. Börner: Evangelische Kirche Ludwigshafen (6.5.)

G. Börner: Schloß Thurnau/Bayreuth; Evang. Akademie Tutzing und Univ. Bayreuth (10.10.)

T.A. Enßlin: Gymnasium Erding, (24.7)

E. Müller: MPG-Hauptversammlung Hamburg, (4.6.)

E. Müller: Auricher Wissenschaftstage 2003, Aurich (11.11.)

H. Ritter: Volkssternwarte, München (4.7.)

G. Rudnick: MPA Tag der offenen Tür (25.10.).

G. Rudnick: Montefiore Elementary School, Chicago, U.S.A., (16.1.)

- V. Springel: Volksternwarte Bonn, (27.3.)
 A. Weiss: MPG-Hauptversammlung, Hamburg, (4.6.)
 S.D.M. White: Wissenstransfer Abendvortrag, Tübingen (20.5.)
 S.D.M. White: Vortrag am Tag der offenen Tür, Garching (25.10)

7.4 Kooperationen

Das Institut ist an dem an der Technischen Universität München gegründeten Sonderforschungsbereich 375 über „Astro-Teilchenphysik“ beteiligt.

Folgende EU-Netzwerke sind aktiv: „Thermonuclear Supernovae and Cosmology“ (W. Hillebrandt); „Cosmic Microwave Background“ (R. Sunyaev); „Gamma-Ray Burst“ (R. Sunyaev); „Planck Surveyor“ (S. White); „Inter Galactic Medium“ (S. White).

7.5 Sonstige Reisen

- M.A. Aloy: Departamento de Astronomía y Astrofísica, Valencia (17.04.–04.05.)
 G. Börner: Shanghai Astronomical Observatory, Shanghai (14.10.–20.12.)
 E. Churazov: Space Research Institute, Moskau (20.04.–04.05., 26.08.–11.09.)
 T. Di Matteo: Carnegie Mellon University, Pittsburgh, USA (5.10.–25.10.)
 G. H. F. Diercksen: University, Montevideo, Uruguay (18.01.–15.02.)
 G. H. F. Diercksen: University of Tokyo, Tokyo, Japan (01.04.–12.06)
 A. Ferguson: European Southern Observatory, Santiago Chile (17.06.–08.07).
 M. Gilfanov: Space Research Institute, Moskau (14.05.–14.06., 28.09.–25.10.)
 G. Kauffmann: Carnegie Observatories, Pasadena (26.1.–28.2.)
 W. Kraemer: National Research Council Canada, Ottawa (1.4.–30.4.)
 W. Kraemer: University of Lund, Sweden (1. 7.–25.7.)
 W. Kraemer: Comenius University, Bratislava, SK (22. 9.–10.10.)
 W. Kraemer: Academy of Sciences, Prague, CZ (13.10.–31.10.)
 B. Ménard: Shanghai Astronomical Observatory, China (25.04.–03.09.)
 F. Miniati: Lawrence Berkeley National Laboratory, Berkeley (10.07.–03.08.)
 J.A.Rubiño-Martín: Instituto de Astrofísica de Canarias, Tenerife (01.01.–31.01., 01.04.–31.05.)
 S. Yu. Sazonov: INTEGRAL Science Data Centre, Versoix, Switzerland (02.06.–02.07.)
 S. Yu. Sazonov: Space Research Institute, Moskau (12.04.–27.04)
 S. Yu. Sazonov: Space Research Institute, Moskau (20.12.–06.01)
 M. Stritzinger: Cerro Tololo Inter-American Observatory, La Serena, Chile (11.6.–25.8)
 C. Vogt: Sterrewacht Leiden, Leiden (01.05.–31.07.)
 S. Zaroubi: Israel Institute of Technology, Haifa, Israel (10.4.–30.4. and 1.11.–30.11.)

8 Veröffentlichungen

8.1 In Zeitschriften und Büchern

Erschienen:

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- Brüggen, M.: Simulations of buoyant bubbles in galaxy clusters. *Astrophys. J.* **592** (2003), 839–845
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