

Garching

Max-Planck-Institut für extraterrestrische Physik

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0 Allgemeines

Die wissenschaftlichen Aktivitäten am MPE sind organisatorisch in vier große Arbeitsbereiche aufgeteilt, die jeweils von einem Direktor geleitet werden: (1) Infrarot und Submm/mm Astronomie (Prof. Dr. Reinhard Genzel), (2) Optische und Interpretative Astronomie (Prof. Dr. Ralf Bender), (3) Hochenergieastrophysik (Prof. Dr. Kirpal Nandra) und (4) Zentrum für Astrochemische Studien (Prof. Dr. Paola Caselli). Diese vier Arbeitsbereiche, sowie noch zusätzlich zwei unabhängige Forschungsgruppen, beschäftigen sich – oft bereichsübergreifend – mit unseren acht großen Forschungsthemen. Dabei werden überwiegend experimentelle Methoden angewandt, aber auch theoretische Untersuchungen durchgeführt. Der Name des Instituts bezieht sich einerseits auf den Gegenstand der Forschung: die Physik des Weltraums, andererseits auf die Forschungsmethoden: viele unserer Experimente werden notwendigerweise oberhalb der dichten, absorbierenden Erdatmosphäre mit Flugzeugen, Satelliten und Raumsonden durchgeführt. In zunehmendem Maße setzen wir aber, vor allem im optischen, im Infrarotbereich und in der Astrochemie, auch Instrumente an erdgebundenen Teleskopen ein. Methodisch lassen sich die Forschungsaktivitäten des MPE in mehrere Bereiche einteilen. In der beobachtenden Astrophysik werden am MPE innovative Instrumente vollständig oder zum Teil gebaut. Damit wird die Strahlung entfernter Objekte in den Millimeter/Submillimeter-, Infrarot-, Optischen-, Röntgen- und Gammabereich gemessen. Der hierbei überdeckte Teil des elektromagnetischen Spektrums umfasst mehr als zwölf Dekaden. Die untersuchten Objekte reichen von nahen Kometen bis zu den fernsten Quasaren, von winzigen Neutronensternen bis zu Galaxienhaufen, den größten bekannten Formationen im Kosmos. Theoretische Arbeiten liefern die Grundlagen zum Verständnis und Interpretation der Beobachtungen und Messungen. Die direkte Wechselwirkung von Beobachtern, Experimentatoren und Theoretikern im Hause ist ein Merkmal unseres Arbeitsstils und führt oft im direkten Wechselspiel von Hypothesen und Beobachtungstatsachen zu einem frühen Erkennen von Zusammenhängen und damit zu einer frühzeitigen Identifikation vielversprechender neuer Forschungsrichtungen. Ergänzt werden unsere Forschungsaktivitäten durch Experimente im Labor, mit denen sowohl die aus Theorie und Beobachtungen gewonnenen Ergebnisse überprüft als auch Informationen und Erkenntnisse gewonnen werden, die wiederum in theoretische Modelle und die Dateninterpretation einfließen. Eine externe technologische Einrichtung des MPE ist von besonderer Bedeutung: Die 130 m lange Vakuumanlage Panter zum Test von Röntgenteleskopen in Neuried bei München. Fast alle röntgenastronomischen Experimente oder Teile davon wurden in dieser Anlage getestet. Unter anderem durch diese Einrichtung findet ein Transfer von neuen Verfahren und Methoden in die industrielle Anwendung statt. Im Rahmen unserer Transferaktivitäten hielt das MPE 10 Patente am Ende von 2020. Neben

der Forschung nimmt unser Institut auch universitäre Ausbildungsaufgaben wahr. Mehr als zehn MPE-Wissenschaftler sind als Hochschullehrer an zahlreichen Universitäten tätig und betreuen studentische Forschungsarbeiten, wie z.B. Bachelor-, Master- und Doktorarbeiten. Die Mehrzahl davon an den beiden Münchner Universitäten, aber auch an anderen deutschen Hochschulen und im Ausland. Darüber hinaus veranstalten wir spezielle Seminare und Symposien zu den im Institut behandelten Forschungsgebieten, häufig in Zusammenarbeit mit Universitätsinstituten. Unsere sehr erfolgreiche „International MaxPlanck Research School (IMPRS) on Astrophysics“ an der Ludwig-Maximilians-Universität (LMU) München brachte eine wesentliche Intensivierung der Doktorandenausbildung im Raum Garching/München. An dieser im Jahre 2000 gegründeten „Graduate School“ sind neben unserem Institut und dem Max-Planck-Institut für Astrophysik (MPA) noch das Institut für Astronomie und Astrophysik der LMU und die Europäische Südsternwarte beteiligt. Mit typisch 80 Doktoranden in diesem Programm, wovon etwa 30 am MPE arbeiten, gehört die IMPRS on Astrophysics zu den größten Einrichtungen dieser Art weltweit. Das MPE präsentiert seine Arbeit und die Ergebnisse seiner Forschung auch einem breiten Publikum. Regelmäßige Meldungen über die Wissenschaft, Projekte und Menschen am Institut werden ergänzt durch eine Vielzahl an Veranstaltungen sowohl im Hause als auch außerhalb, wie Führungen für Gruppen (meist Schulklassen), Teilnahme am jährlichen „Girls’ Day“, dem zweijährig stattfindenden „Tag der offenen Tür“ sowie der Anleitung von Schüler- und Hochschulpraktikanten. Darüber hinaus halten MPE-Wissenschaftler regelmäßig populär-wissenschaftliche Vorträge außer Haus.

1 Personal und Ausstattung

1.1 Personalstand

Direktoren und Professoren:

Prof. Dr. P. Caselli (Geschäftsführung), Zentrum für Astrochemische Studien

Prof. Dr. K. Nandra, Hochenergie-Astrophysik

Prof. Dr. R. Bender, Optische und Interpretative Astronomie

Prof. Dr. R. Genzel, Infrarot- und Submillimeter-Astronomie

Prof. Dr. G. Haerendel (emeritiert)

Prof. Dr. R. Lust (emeritiert)

Prof. Dr. G. Morfill (emeritiert)

Prof. Dr. K. Pinkau (emeritiert)

Prof. Dr. J. Trümper (emeritiert).

Auswärtige wissenschaftliche Mitglieder:

Prof. Dr. E. van Dishoeck, Leiden Observatory (Niederlande)

MPE Prof. Dr. A. Fabian, Cambridge University (UK)

Prof. Dr. V. Fortov †, IHED, Moskau (Russland)

Prof. Dr. J. Kormendy, Univ. of Texas at Austin (USA)

Prof. Dr. R. Z. Sagdeev, Univ. of Maryland (USA)

Prof. Dr. M. Schmidt, CALTECH, Pasadena (USA)

Dr. K. Schuster, IRAM, Grenoble (Frankreich)

Prof. Dr. A. Sternberg, Tel Aviv University (Israel)

Fachbeirat:

Prof. Dr. C. Canizares, MIT, Kavli Institute, Cambridge (USA)

Prof. Dr. A. Celotti, SISSA, Trieste (Italien)

Prof. Dr. N. Evans, The University of Texas at Austin, Austin (USA)

Prof. Dr. K. Freeman, Mt Stromlo Observatory, Weston Creek (Australien)

Prof. Dr. A. Goodman, Harvard-Smithsonian Center for Astrophysics, Cambridge (USA)

Prof. Dr. R. C. Kennicutt, University of Arizona, Tucson (USA) and Texas A/M University, College Station (USA)

Prof. Dr. K. Kuijken, Universiteit Leiden, Leiden (Niederlande)

Prof. Dr. E. Quataert, University of California, Berkeley (USA)

Prof. Dr. G. J. Stacey, Cornell University, Ithaca (USA)

Fachübergreifende Fachbeiräte:

Prof. Dr. C. Cesarsky, Commissariat à l'Énergie Atomique, France, Sacley-Paris (Frankreich)

Prof. Dr. J. Peacock, Universität Edinburg (UK)

Kuratorium (gemeinsam mit dem MPI für Astrophysik):

Prof. Dr. A. Bode, Leibniz-Rechenzentrum der Bayerischen Akademie der Wissenschaften, Garching

Dr. R. Breuer, ehem. Chefredakteur Spektrum der Wissenschaft, Heidelberg

Prof. Dr. P. Ehrenfreund, Vorstandsvorsitzende, Deutsches Zentrum für Luft und Raumfahrt (DLR), Köln

MdB F. Hahn, Deutscher Bundestag, Berlin

Prof. Dr. B. Huber, Präsident der Ludwig-Maximilians-Universität, München

Dr. F. Merkle, OHB System AG, Bremen

Dr. U. von Rauchhaupt, Frankfurter Allgemeine Zeitung, Frankfurt/Main

Prof. R. Rodenstock, Optische Werke G. Rodenstock GmbH Co. KG, München

Dr. J. Rubner, Bayerischer Rundfunk, München

Dr. M. Wolter, Bayer. Staatsministerium für Wirtschaft, Energie und Technologie, München

Wissenschaftliche Auszeichnungen, Berufungen:

de Zeeuw, T.: Legacy Fellow of the American Astronomical Society, Washington, USA, February 2020.

Tacconi, L.: Foreign Member of the Royal Swedish Academy of Sciences, Class for Astronomy and Space Science, Stockholm, Sweden, September 2020.

Trümper, J.: Honorary member of German Physical Society DPG, Bad Honnef, Germany, September 2020.

Genzel, R.: Nobel Prize for Physics 2020, Royal Swedish Academy, Stockholm, Sweden, October 2020.

Genzel, R.: Pontifical Academy of Sciences, Vatican City, October 2020.

Bulbul, E.: ERC Consolidator Grant, European Research Council ERC, Brussels, Belgium, December 2020.

Tacconi, L.: ALMA Board Chair, ALMA, Santiago, Chile, December 2020.

Tacconi, L.: ESO Council President, ESO, Garching, Germany, December 2020.

van Dishoeck, E.: Jules Janssen Prize 2020, French Astronomical Society, Paris, France,

December 2020.

Wissenschaftliche Mitarbeiter:

A) Infrarot und Submillimeter-Astronomie

Sekretariat: Richter, A.

Teamassistentinnen: Dengler, S.; Kleiser, A.; ZankerSmith, J.

Bauböck, Dr. M.; Biondi, Dr. F. (seit 01.10.); Coogan, Dr. R.; Cortés, Dr. A. (bis 31.03.); Cridland, Dr. A. (seit 15.10.); Dallilar, Dr. Y.; Davies, Dr. R.; Eisenhauer, Dr. F.; Feuchtgruber, Dipl.-Phys. H.; Förster Schreiber, Dr. N.; Gao, Dr. F. (bis 01.12.); Gillessen, Dr. S.; Habibi, Dr. M.; Hu, Dr. C.Y.; Kravchenko, Dr. K. (seit 01.10.); Lee, Dr. M.; Liu, Dr. D. (seit 02.11.); Lutz, Dr. D.; More, N. (seit 11.03.); Ott, Dr. T.; Poglitsch, Dr. A. (beurlaubt); Price, Dr. S.; Rabien, Dr. S.; Schrubba, Dr. A.; Senol, Dr. Y. (seit 01.11.); Shangguan, Dr. J.; Shimizu, Dr. T.; Stadler, Dr. J.; Straub, Dr. O.; Sturm, Dr. E.; Tacconi, Dr. L.; Übler, Dr. H.

Doktoranden (D.) / Master (M.)

Bolzer, M.-L. (seit 02.11., M., Eisenhauer); Worth-Davies, R. (bis 31.10., D., Tacconi/Förster-Schreiber/Genzel); Drescher, A. (seit 01.05., M., Eisenhauer); Fellenberg von, S. (D., Eisenhauer/Gillessen); Jimenez Rosales, A. (bis 31.10., D., Dexter/Genzel); Kaltenbrunner, D. (seit 01.07., M., Shimizu); Lee, L. Y.-L. (seit 01.11., D., Tacconi, Förster Schreiber); Widmann, F. (D., Eisenhauer), Wölfer, L. (D., van Dishoeck); Young, A. (seit 09.11., M. Gillessen)

B) Hochenergie-Astrophysik

Sekretariat: Boller, B.

Teamassistentin: Frankenhuizen, W.

Andritschke, Dr. R.; Becker, Dr. W.; Begue, Dr. D. (bis 30.06.); Behrens, Dr. A.; Beitler, C. (seit 01.10.); Boller, Prof. Dr. Th.; Bonholzer, M.; Bradshaw, Dr. M.; Brunner, Dr. H.; Buchner, Dr. J.); Bulbul, Dr. E.; Burgess, Dr. M.J.; Burkert, Dr. W.; Buron, A.; Burwitz, Dr. V.; Carpano, Dr. S.; Chen, Dr. J. (bis 30.11.); Collmar, Dr. W. (bis 30.06.); Dennerl, Dr. K.; Eraerds, Dr. T.; Eder, Dipl.-Ing. J.; Emberger, V.; Frank, J.; Freyberg, Dr. M.; Friedrich, Dr. P.; Friedrich, Dr. S.; Gaida, R.; Gatuzz, Dr. E.; Ghirardini, Dr. V.; Gueguen, Dr. A.; Greiner, Dr. J.; Haberl, Dr. F.; Hartmann, K.; Hartner, Dipl.Math. G.; Haase, Dr. J.; Hauser, G.; Keil, Dr. I.; Kienlin von, Dr. A.; Klein, Dr. M.; Koch, A.; Liu, Dr. A. (seit 19.08.); Liu, Dr. T.; Liu, Dr. Z. (seit 04.08.); Maitra, Dr. Ch.; Meidinger, Dr. N.; Merloni, Dr. A.; Müller-Seidlitz, Dr. J.; Osterhage, Dr. S.; Ott, S.; Pfeffermann, Dipl.-Phys. E.; Predehl, Dr. P.; Ramos Ceja, Dr. M.; Rau, Dr. A.; Reiffers, Dr. J.; Rukdee, Dr. S. (seit 01.12.); Salvato, Dr. M.; Sanders, Dr. J.; Stehlikova, V.; Stewart, Dr. I.; Thi, Dr. W.-F.; Tsvetkova, Dr. A. (seit 01.10.); Yazici, Dr. S. (bis 30.11.); Zhang, Dr. X.-L.

Doktoranden (D.) / Master (M.)

Arcodia, R. (D., Merloni); Bahar, E. (seit 23.09., D., Bulbul); Baronchelli, L. (bis 31.08., D., Nandra); Beitler, C. (bis 30.09., D., Meidinger); Berlato, F. (D., Greiner); Biltzinger, B. (D., Greiner); Bogensberger, D. (D., Nandra); Chitham, I. J. (D., Finoguenov); Coffey, D. (D., Salvato/ Boller); Fresco, A. (D., Merloni); Grau, M. (seit 03.08., M., Salvato); Grotova, I. (07.09., D., A. Rau); Kaefer, F. (bis 30.11., D., Finoguenov); Kuhn, M. (seit 01.07., M., Greiner); Malyali, A. (D., Rau); Mayer, M. (D., Becker); Pawar, A. (seit 01.11., M., Greiner); Pleintinger, M. (D., Diehl), Scheck, D. (seit 15.10., M., Sanders); Seppi, R. (D., Comparat); Trost, M. (seit 01.04., M., Greiner); Waddell, S. (seit 03.09., D., Nandra, Boller); Weinberger, C. (D., Diehl); Wolf, J. (D., Salvato); Zheng, X. (seit 18.9., D. Ponti)

C) Optische und Interpretative Astronomie

Sekretariat: Ingram, C.

Bodendorf, Dr. C.; Böhringer, Prof. Dr. H.; Bohnet, Dipl. Phys. A.; Escartin, J.; Fabricius, Dr. M.; Farrow, Dr. M.; Gajda, Dr. G.; Gerhard, Prof. Dr. O.; Gracia Carpio, Dr. J.; Grupp, Dr. F.; Guglielmo, Dr. V. (bis 30.09.); Haeuser, Dr. M.; Hopp, Dr. U.; Katterloher, Dr. R.; Kluge, Dr. M.; Paech, Dr. K.; Parikh, Dr. T.; Pezzotta, Dr. A. (seit 01.03.); Raison, Dr. F.; Saglia, PD. Dr. R.; Sanchez, Dr. A.; Snigula, Dr. J.; Steinwagner, Dr. J.; Subramanian, Dr. S. (seit 01.03.); Thomas, Dr. J.; Varga, Dr. T.; Weller, Prof. Dr. J.; Wetzstein, Dr. M.

Doktoranden (D.) / Master (M.)

Arth, A. (D., Bender); Blumhof, M. (M., Bender); Clarke, J. (D., Gerhard); DeNicola, S. (D., Saglia); Fahrenschon, V. (D., Saglia); Kellermann, H. (D., Grupp); Kodric, M. (D., Bender); Kreckler, K. (D., Fabricius); Lipka, M. (D., Saglia); Lippich, M. (D., Bender); Merghan, K. (D., Bender); Neureither B. (D., Thomas); Pulsoni, C. (D., Gerhard); Seminaite, A. (D., Sanchez); Smolla, M. (D., Bender); Steuer, J. (D., Grupp); Wylie, S. (D., Gerhard)

D) Zentrum für astrochemische Studien

Sekretariat: Langer, A.

Bizzocchi, Dr. L. (bis 11.12.); de Oliveira Alves, Dr. F.; Chantzoz, Dr. J. (01.04.-31.08.); Endres, Dr. Ch.; Giuliano, Dr. B.M.; Gong, Dr. M.; Hsieh, Dr. T.-H. (seit 01.09.); Ivlev, Dr. A.; Jusko, Dr. P.; Küffmeier, Dr. M. (seit 01.09.); Laas, Dr. J. (bis 30.06.); Lattanzi, Dr. V.; Maureira Pinochet, Dr. M.J.; Müller, Dr. T., (bis 29.02.); Nagy, Dr. Z. (bis 29.02.); Nolan, Dr. Ch.; Pineda Fornerod, Dr. J.; Rab, Dr. Ch. (seit 06.07.); Redaelli, Dr. E. (seit 15.03.); Schmiedeke Dr. A.; Segura-Cox, Dr. D.; Silsbee, Dr. K.; Sipilä, Dr. O.; Spezzano, Dr. S.; Szűcs, Dr. L. (bis 29.02.); Zampetaki, Dr. A.; Zhao, Dr. B. (bis 18.12.)

Doktoranden (D.) / Master (M.)

Agurto Gangas, C. (bis 13.03., D., Caselli); Alberton, D. (seit 01.09., D., Caselli); Carl, T. (seit 01.10., M., Pineda Fornerod, Schmiedeke); Chantzoz, J. (bis 31.03., D., Spezzano); Choudhury, S. (D., Caselli); Ferrer Asensio, J., (seit 01.09., D., Caselli); Giers, K. (seit 01.10., M. Caselli); Müller, B. (D., Caselli); Prudenzano D. (bis 30.04., D., Caselli); Redaelli, E. (bis 14.03., D., Caselli); Winkler M., (bis 31.10., D., Caselli); Valdivia Mena, M. T. (seit 01.09., D., Caselli); Zamponi Fuentealba, J. (D., Caselli)

E) Unabhängige Forschungsgruppen

E1) Max Planck Fellows Group Mohr

Mohr, Prof. Dr. J.; Klein, Dr. M.; Grandis, Dr. S.; Bocquet, Dr. S.

PhD students: Paulus, M.

E2) Forschungsgruppe Gerhard

Gerhard, Dr. O.; Khoperskov, Dr. S.; Gajda, Dr. G.

PhD Students: Clarke, J.; Pulsoni, C.; Wylie, S.

E3) Forschungsgruppe van Dishoeck

van Dishoeck, Prof. Dr. E.; Cridland, Dr. A.; Hu, Dr. C.-Y.

PhD Students: Wölfer, L.

F) Ingenieurbereich und Werkstätten

F1) Elektronische Entwicklung

Plattner, Dr. M. (Leitung)

Albrecht, Dipl.-Ing. S.; Barl, Dipl.-Ing. (FH) L.; Bechteler, Dr. T.; Besendörfer, A.; Böhme, H.; Bornemann, Dipl.-Ing. (FH) W.; Burghardt, Dipl.-Ing. (FH) T.; Buron, M.Sc. A.; Grabichler, M.Sc. J.; Hälker, Dipl.-Ing. (FH) O.; Hans, O.; Hartmann, K.; Kink, Dipl.-Ing. (FH) W.; Köglmeier, B.; Lederhuber, M.Sc. A.; Mandla, M.Sc. C.; Müller, Dipl.-Ing. (FH)

S.; Neumeier, M.Sc. L.; Ott, Dr.-Ing. S.; Penka, M.Sc. D.; Rau, M.Sc. C.; Reiffers, Dipl.-Ing. (FH) J.; Skvarc Bozic, M.Sc. G.; Schulte, Dr. W.; Yaroshenko, V.; Zanker-Smith, J.; Ziegleder, Dipl.-Ing. (FH) J.

F2) Elektronische Werkstatt und Haustechnik

Oberauer, F. (Leitung) Bachhuber, M.; Berger A.; Cibooglu, H.; Emslander, A.; Greßmann, R.; Langer, P.; Özdemir, H.; Rupprecht, T.; Schneider, M.; Schneider R.

Doktoranden (D.) / Master (M.) : Alexander, B. (M., Plattner); Papist, H. (bis 31.01., M., Tran); Neumeier, L. (M., Plattner); Annadevara, S. (M., Plattner); Uysal, S. (M., Plattner); Aracic, V. (M., Mandla); Kotre, G. G. (M., Mandla); Erhart, M. (M., Plattner)

F3) Mechanik und Testlabor

Schubert, Dr. J. (Leitung) Antonelli, Dr.-Ing. V.; Bräuninger, M.Sc. K. (seit 01.10.); Deyssenroth, C.; Deyssenroth, M.; Dittrich, Dipl.-Ing. (FH) K.; Emslander, A.; Geis, Dr. N.; Gemperlein, Dipl.-Phys. H.; Hartl, Dr. M.; Haußmann, F.; Hörmann, M.Sc. V.; Huber, Dipl.-Ing. H.; Mican, Dipl.-Ing. B.; Paßlack, Dipl.-Ing. (FH) S.; Pflüger, Dipl.-Ing. (FH) A.; Pietschner, Dipl.-Ing. (FH) D.; Rohe, C.; Strecker, R.; Frank, M.Sc. J.

F4) Mechanische Werkstatt

Czempel, S. (Leitung) Bayer, R.; Brara, A.; Budau, B.; Eibl, J.; Feldmeier, P.; Furchtsam, C.; Goldbrunner, A.; Hartwig, J.; Honsberg, M.; Huber, D.; Huber, F.-X.; Kestler, H.-J.; Knapp, S.; Krautz, C.; Reinold, A.; Sandmair, R.; Schunn, W.; Schuppe, D.; Soller, F.; Waldhör, F. (seit 01.02.); Zieglmeier, J. (bis 31.01.)

Auszubildende: Bergner, K.; Furchtsam, S.; Heckmair, S.; Lindenmüller C. (seit 01.09.); Loichinger, L.; Stadler, B.; Waldhör, F. (bis 31.01.)

G) Zentrale Bereiche

G1) Datenverarbeitung

DV-Ausschuss

Haberl, Dr. F. (Vorsitz) Bohnet, Dipl.-Phys. A.; Endres, Dr. C.; Fabricius, Dr. M.; von Kienlin, Dr. A.; Müller, Dipl.-Ing. (FH) S.; Ott, Dr. T.; Schubert, Dr. J.

G2) Zentrale IT-Gruppe

Bohnet, Dipl. Phys. A. (Leitung); Agudo Berbel, A.; Baumgartner, H.; Kleiser, A.; Klose, L.; Kollmer, C.; Oberauer, A.; Ott, Dr. T.; Paul, J.; Elsner, C.; Snigula, Dr. J.; Wieprecht, Dipl.-Ing. E.; Wiezorrek, Dipl.-Ing. (FH) E.

G3) Öffentlichkeitsarbeit

Hämmerle, Dr. H.; (Leitung) Collmar, E. (bis 31.10.); Niebisch, B.

G4) Bibliothek

Bartels, C. (Leitung) Blank, E., Bolicovic, M.

G5) Verwaltung

Wanger, H. (Leitung VAD)

Sekretariat: Hesseler, G.

Apold, G.; Arturo, A.; Ayari, S.; Bauer, T.; Belscak, L.; Cziasto, U.; Eder, A.; Eicher, C.; Faust, T. (seit 01.09.); Gareva, L.; Goldbrunner, S.; Grohmann, M.; Hartung, I.; Hausmann, S.; Hidasi, R.; Hofstetter, S. (bis 20.07.); Jäkel, T.; Jirsch, Y.; Kaps, S.; Keil, M.; Kestler, L.; Krapivina, A.; Kuhwald, E.; Maier, E.; Nagy, A.; Neun, A. (BR); Paschou, J.; Preisler, C.; Rochner, R.; Rosenberger, S.; Sacher, A.; Schmidt, A.; Schwaiger, S.; Seyfarth, B.; Stock, C.; Stöckl, D.; Stricker, C.; Studier, S.; Thiess, F.; Thiess, L.; Üblacker, K.; Vogt, J.P.

G6) IMPRS

Hilbert, A.

2 Lehrtätigkeit, Prüfungen und Gremientätigkeit

2.1 Lehrveranstaltungen/Seminare

Caselli, P.: Introduction to Astrochemistry. Chalmers University of Technology, Göteborg, Sweden, SS 20.

Caselli, P.: Star and Planet formation. University of Bologna, Italy, WS 20.

Eisenhauer, F.: High Angular Resolution Astronomy. Technische Universität München, SS 20.

Eisenhauer, F.: Introduction to Astrophysics. Technische Universität München, WS 19/20.

Boller, T.: AGN Physics. Goethe-Universität, Frankfurt am Main, WS 20/21.

Boller, T.: Dynamik des Planetensystems. Goethe-Universität, Frankfurt am Main, SS 20.

Boller, T.: Strahlung und Materie. Goethe-Universität, Frankfurt am Main, SS 20.

Plattner, M.: Integrated Systems for Industry and Space Applications. Technische Universität München, WS 19/20, WS 20/21.

Straub, O.: Wie wiegt man schwarze Löcher. Dominikus-Gymnasium Karlsruhe, WS 20/21.

Straub, O.: Schwarze Löcher und wie man etwas wiegt, was man nicht sehen kann. Montan University Leoben, Austria, WS 20/21.

3 Akademische Abschlussarbeiten

3.1 Bachelorarbeiten

Abgeschlossen:

Ahmeti, D.: Simulationen zur Entstehung und Entwicklung von Elliptischen Galaxien. Ludwig-Maximilians-Universität München, 2020.

Azuar, S.: Zur Erforschung extrasolarer Planeten und ihrer Eigenschaften in KeplerMultiplanetensystemen. Ludwig-Maximilians-Universität München, 2020.

Illich, B.: Tektonik auf Exoplaneten in Zusammenhang mit der Suche nach extraterrestrischem Leben. Ludwig-Maximilians-Universität München, 2020.

Kubanowski, E.: Das Alter einer Galaxie. Ludwig-Maximilians-Universität München, 2020.

Matuschek, A.: Exomonde. Ludwig-Maximilians-Universität München, 2020.

Rufer, D.: Massenbestimmung supermassereicher Schwarzer Loecher. Ludwig-Maximilians-Universität München, 2020.

Schösser, E.: Constraining GRB Afterglow Fireballs with Late Two-Shell Collisions. Technische Universität München, 2020.

Seidel, B.: Supermassereiche Schwarze Löcher in aktiven Galaxiekernen und die Eisen K-alpha Linie. Ludwig-Maximilians-Universität München, 2020.

Thomas, L.: Die Suche nach Exoplaneten in der habitablen Zone um M-Zwerg. Ludwig-Maximilians-Universität München, 2020.

Tschirschwitz, J.: Atmosphären und Bewohnbarkeit von erdähnlichen Exoplaneten in der habitablen Zone. Ludwig-Maximilians-Universität München, 2020.

Tsina, I.: Die Entwicklung der Tully-Fischer Relation. Ludwig-Maximilians-Universität München, 2020.

Waldmann, P.: Masse-Radius Beziehung bei Super-Earths und Sub-Neptunes sowie deren Verteilung. Ludwig-Maximilians-Universität, 2020.

Yun, J.: Fragmentation of Dust Aggregates in Molecular Clouds. Ludwig-Maximilians Universität München, 2020.

3.2 Masterarbeiten

Abgeschlossen:

Beitler, C.: Thermal Design and Analysis of an X-Ray Space Instrument. Technische Universität München, 2020.

Crosta, M.: Rest frame optical properties of Lyman-alpha emitters from the HETDEX Survey. University of Bologna, 2020.

Erhart, M.: Implementation and optimization of non-parametric clustering algorithms on aRISC-V softcore. Technische Universität München, 2020.

Hou, J.: Anisotropic clustering analysis of the Quasar Sample from SDSS-IV extended Baryon Oscillation Spectroscopic Survey. Ludwig-Maximilians-Universität München, 2020.

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3.3 Dissertationen

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Agurto Gangas, C.: Study of grain growth in the early phases of protostars: from envelopes to disks. Ludwig-Maximilians Universität München, 2020.

Baronchelli, L.: AGN in the x-ray relativistic effects in the Fe K alpha line. Ludwig Maximilians Universität München, München, 2020. Berlato, F.: New constraints on gamma-ray bursts. Technische Universität München, München, 2020.

Bhattacharya, S.: The survey of planetary nebulae in Andromed (M31): discrete tracers in the disc and inner halo. Ludwig Maximilians Universität München, München, 2020.

Chantzos, J.: High resolution spectroscopy of molecules of astrophysical interest and radio astronomical observations of star-forming regions. Ludwig-Maximilians Universität München, 2020.

Davies, Re.: Feedback in Galaxies During the Peak Epoch of Cosmic Star Formation Activity and Black Hole Growth. Ludwig-Maximilians-Universität München, 2020.

Jiménez-Rosales, A.: Polarization properties of GRMHD black hole accretion models. Ludwig-Maximilians-Universität München, 2020.

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Milakovic, D.: Fundamental physics and cosmology using astronomical laser frequency combs. Ludwig-Maximilians-Universität München, 2020.

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Pleintinger, M. M. M.: Star groups and their nucleosynthesis. Technische Universität München, München, 2020.

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4 Veröffentlichungen

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5 Projekt-Gruppen

5.1 Infrarot- und Submillimeter-Astronomie

Stellvertreter des Gruppendirektors: Lutz, Tacconi.

ERIS: Buron, Dallilar, Ric Davies, M. Deysenroth, Eisenhauer, Feuchtgruber, Gemperlein, Hans, Hartl, H. Huber, Kleiser, Kravchenko, Mandla, Plattner, C. Rau, Schubert, Sturm, Wiezorrek.

GRAVITY, GRAVITY+: Bauböck, Bolzer, Buron, de Zeeuw, Dengler, Drescher, Eisenhauer, Gao, Genzel, Gillessen, Jiménez Rosales, M. Haase, Hartl, Haußmann, Lutz, Mandla, More, T. Ott, C. Rau, Schubert, Shangguan, Shimizu, Stadler, Straub, Sturm, Tacconi, von Fellenberg, Widmann, Wieprecht, Wiezorrek, Yazici, Zanker-Smith.

LBT Argos: Barl, Ric Davies, M. Deysenroth, Gemperlein, Rabien, Zanker-Smith, Ziegleder
MICADO: Barl, Biondi, Ric Davies, Dengler, B. Eder, J. Eder, Andreas Emslander, Garrel, Geis, Gemperlein, Hartl, Haußmann, Hörmann, H. Huber, Kleiser, Kravchenko, Mandla, Neumeier, Pflüger, Plattner, Rabien, Schubert, Sturm, Ziegleder.

Galaktisches Zentrum: Bauböck, Eisenhauer, Genzel, Gillessen, Habibi, T. Ott, von Fellenberg, Jiménez Rosales, Stadler, Straub, Widmann, Young.

Galaxienkerne: Ric Davies, Genzel, Herrera-Camus, Kaltenbrunner, Lutz, Schrubba, Shangguan, Shimizu, Sturm, Tacconi, de Zeeuw.

Galaxien bei hoher Rotverschiebung: Coogan, Rebecca Davies, Förster Schreiber, Genzel, Habibi, Herrera-Camus, L. Lee, M. Lee, D. Liu, Lutz, Price, Schrubba, Sturm, Tacconi, Übler.

Sternentstehung: Cridland, Hu, Schrubba, van Dishoeck, Wölfer.

5.2 Hochenergie-Astrophysik

ATHENA/Spiegel: Bradshaw, Budau, Burwitz, Hartner, Passlack.

ATHENA/WFI: Albrecht, Andritschke, Antonelli, Behrens, Beitler, Bonholzer, Bornemann, Eder, Emberger, Eraerds, Frank, Freyberg, Haberl, Hälker, Hartmann, Hauser, Kink, Köglmeier, Lederhuber, Meidinger, Mican, Müller-Seidlitz, Nandra, Oser, Ott, Pietschner, Plattner, A. Rau, Reiffers, Schubert, Schweingruber, Strecker, Treberspurg, v. Kienlin.

Chandra: Burwitz, Predehl.

Einstein Probe/Detektor: Keil, Meidinger, Nandra.

Einstein Probe/Spiegel: Burwitz, Eder, Friedrich, Gaida, Hartmann, Pfeffermann, Rohe, Schuppe, Stehlikova.

eROSITA: Andritschke, Becker, Boller, Bornemann, Bräuninger, Brunner, Budau, Burghardt, Bulbul, Burwitz, Carpano, Coutinho, Dennerl, Dittrich, Eder, Eibl, Emberger, Eraerds, Freyberg, P. Friedrich, S. Friedrich, Gaida, Goldbrunner, Gueguen, Grossberger, Haberl, Hälker, Hartmann, Hartner, F. Huber, Kink, Maitra, Meidinger, Merloni, Mican, S. Müller, Nandra, F. Oberauer, Pfeffermann, Pietschner, Predehl, RamosCeja, Rau, Reiffers, Rohé, Rupprecht, Salvato, Schrey, Schuppe, Soller, Stewart, Trümper, v. Kienlin, Yaroshenko.

ROSAT: Boller, Freyberg, Haberl, Trümper. Swift: Greiner.

XMM-Newton: Boller, Dennerl, Freyberg, Haberl, Meidinger, Trümper. Fermi: Collmar, Diehl, Greiner, v. Kienlin. GROND: A. Rau.

INTEGRAL: Diehl, v. Kienlin, X.-L. Zhang. **MXT-SVOM:** Bradshaw, Burwitz, Meidinger, Nandra, A. Rau.

eXTP: Bechteler, Meidinger, Nandra, Yazici.

4MOST: Boller, Comparat, Merloni, Salvato, Thi.

Aktive Galaxien: Boller, Buchner, Collmar, Comparat, Liu, Merloni, Nandra, Salvato.

Clusters of Galaxies: Bulbul, Comparat, Gatuzz, Ghiradini, Ramos-Ceja, Sanders.

eBOSS/SPIDERS: Comparat, Merloni, Nandra, Salvato.

5.3 Optische und Interpretative Astronomie

Large Scale Structure, eBoss, HETDEX: Bender, Farrow, Fabricius, Hopp, Sanchez.

EUCLID: Bender, Escartin, Fabricius, Garcia Carpio, Gillhuber, Grupp, Guglielmo, Hartung, Penka, Raison, Saglia, Steinwagner, Wetzstein.

Galaxy Dynamics: Bender, Dehnen, Gajda, Gerhard, Khoperskov, Parikh, Saglia, Thomas.

INODE: Bender, Fabricius, Subramanian **KMOS:** Bender, Saglia.

MICADO: Bender, Fabricius, Saglia, Thomas. **PanSTARRS:** Bender, Farrow, Hopp, Saglia.

Prime Focus Spectrograph: Bender, Fabricius, Garcia Carpio, Sanchez.

Stellare Populationen und Galaxienentstehung: Bender, Hopp, Parikh, Saglia.

5.4 Zentrum für astrochemische Studien

Beobachtungen: De Oliveira Alves, Maureira Pinochet, Pineda Fornerod, Redaelli, Schmiedeke, Segura-Cox.

Theorie: Gong, Ivlev, Jusko, Nolan, Rab, Shingledecker, Silsbee, Sipilä, Zhao.

Labor: Bizzocchi, Endres, Giuliano, Laas, Lattanzi, Spezzano.

6 Projekte und Kooperationen

6.1 Wissenschaftliche Kooperationen

Belgien

Katholieke Universiteit Leuven, Leuven: GRAVITY+.

Chile

ESO, Joint ALMA Observatory, Santiago de Chile: CASObservations; SBNF.

Universidad de Chile, Santiago de Chile: CAS-Observations.

Universidad de Concepcion: Röntgen-Doppelsternsysteme; CAS-Observations; Galaxienentwicklung.

Universidad Catolica Santiago, Santiago de Chile: Röntgen-Doppelsternsysteme; Max-Planck-Partnergruppe Galaktisches Zentrum.

Universidad Diego Portales, Santiago de Chile: CAS-Observations.

China

Donghua University, Shanghai: CAS-Theory.

Institute for High-Energy Physics (IHEP), Peking: Gammaquellen mit COMPTEL und INTEGRAL; Einstein Probe; eXTP.

Nanjing University, Nanjing: CAS-Observations.

National Astronomical Observatories of China, Peking: PFS; CAS-Observations.

Kavli Institute for Astronomy and Astrophysics at Peking University, Peking: PFS.

Shanghai Jiao Tong University, Shanghai: PFS.

Tsinghua University, Peking: PFS.

University of Hongkong, Hongkong: Strahlungsmechanismen von Pulsaren im Röntgen- und Gammabereich.

University of Science and Technology of China, Hefei: PFS.

Xiamen University, Xiamen: PFS.

Xinjiang Astronomical Observatory, Ürümqi: CAS-Theory.

Dänemark

Dänemarks Technische Universität, Lyngby: ATHENA.

Deutschland

Astrophysikalisches Institut Potsdam, Potsdam: eROSITA; XMMNewton; OPTIMA; ARGOS; HETDEX; 4MOST.

Deutsches Elektronen-Synchrotron, Hamburg: CAS-Laboratory.

European Southern Observatory (ESO), Garching: GRAVITY; GRAVITY+; Galaxienentstehung; Nukleare Astrophysik; MICADO; ERIS; Black Hole Cam; Infrared Dark Clouds; CAS-Observations; CAS-Theory.

Fraunhofer Institut für Integrierte Schaltungen, Erlangen: Mikroelektronikentwicklungen; ATHENA.

Fraunhofer Institut for Computer Graphics Research IGD, Darmstadt: IODE.

Heinrich-Heine-Universität, Düsseldorf: Soft Matter Physics.

Institut für Astronomie und Astrophysik Tübingen (IAAT), Tübingen: XMM-Newton; eROSITA; ATHENA; ESBO-DS.

Institut für Astrophysik Göttingen, Göttingen: MICADO.

Institut für Festkörperphysik und Werkstoff-Forschung, Dresden: Entwicklung weichmagnetischer Werkstoffe.

Institut für Materialphysik im Weltraum, Köln: Glasübergänge.

Landessternwarte Heidelberg-Königstuhl, Heidelberg: Galaxienentstehung; ARGOS.

Laser Zentrum Hannover, Hannover: Dichroics for ARGOS; Anti-Reflection Coating ERIS.

Ludwig-Maximilians-Universität, München: MICADO; HETDEX; eROSITA; CAS-Theory.

Max-Planck-Institut für Astronomie, Heidelberg: GRAVITY; GRAVITY+; Pan-STARRS; SDSS; ARGOS; MICADO; EUCLID; CAS-Theory.

Max-Planck-Institut für Astrophysik, Garching: SDSS; OPTIMA; eROSITA; PFS.

Max-Planck-Institut für Biochemie, Martinsried: CAS-Laboratory.

Max-Planck-Institut für Gravitationsphysik, Potsdam: Black Hole Cam.

Max-Planck-Institut für Physik, Werner Heisenberg Institut, München: MPG Halbleiterlabor; Athena.

Max-Planck-Institut für Radioastronomie, Bonn: ARGOS; Black Hole Cam; CAS-

Observations; CAS-Theory.

Physikalisch-Technische Bundesanstalt Berlin, Berlin: eROSITA.

Technische Universität Berlin, Berlin: Interstellares Medium. Technische Universität Darmstadt, Darmstadt: CAST.

Technische Universität München, München: Nukleare Astrophysik; ESBO-DS. Thüringer Landessternwarte Tautenburg, Tautenburg: GROND; Gamma-Ray Bursts.

Universität Bonn, Bonn: ATHENA; eROSITA; EUCLID; CASObservations.

Universität der Bundeswehr, München: SBNAF.

Universität Düsseldorf, Düsseldorf: ERC Advanced Grant; CAS-Theory.

Universität Erlangen (ECAP), Erlangen: eROSITA; ATHENA.

Universität Hamburg, Hamburg: eROSITA; OPTIMA (Flarestars).

Universität Heidelberg, Heidelberg: ATHENA; XFEL; CASTheory.

Universität Jena, Jena: Isolierte Neutronensterne; Nukleare Astrophysik.

Universität Kassel, Kassel: CAS-Observations, CAS-Laboratory.

Universität Köln, Köln: Galaktisches Zentrum; GRAVITY; GRAVITY+; CAS-Observations; CAS-Theory; CAS-Laboratory.

Universität Mannheim, Mannheim: ATHENA; XFEL.

Universität Stuttgart, Stuttgart: ESBO-DS.

Universität Würzburg, Würzburg: AGADE.

Finnland

University of Helsinki, Helsinki: CAS-Theory; CAS-Observations.

University of Turku - Finnish Centre for Astronomy with ESO (FINCA), Turku: MICADO.

Frankreich

Aix-Marseille University, Marseille: CAS-Theory.

CEA, Saclay: INTEGRAL-Spektrometer SPI; EUCLID; SVOM; ATHENA.

Centre d'Etude Spatiale des Rayonnements (UPS), Toulouse: INTEGRAL-Spektrometer SPI; CAS-Observations.

Centre National de la Recherche Scientifique, Paris: INODE.

IAP, Paris: Nukleare Astrophysik.

IPAG, Grenoble: GRAVITY; GRAVITY+; MICADO; CAS-Observations; CAS-Theory.

IRAM, Grenoble: CAS-Observations.

IRAM, Saint-Martin-d'Hères: CAS-Observations; Galaxienentstehung.

Laboratoire d'Astrophysique de Marseille (LAM), Marseille: EUCLID; Gamma-Ray Bursts; PFS; CAS-Observations.

Laboratoire Univers et Particules de Montpellier, Montpellier: Cosmic-ray propagation in molecular clouds.

Observatoire de la Côte d'Azur Nice (OCA), Nizza: GRAVITY+.

Observatoire de Paris (GEPI), Paris: MICADO; GRAVITY.

Observatoire de Paris (LERMA), Paris: CAS-Theory.

Observatoire de Paris (LESIA), Paris: MICADO; GRAVITY.

Observatoire de Paris-Meudon, Paris: GRAVITY; GRAVITY+; Galaktisches Zen-

trum.

SOLEIL Synchrotron (AILES beamline), Saint-Aubin: CASLaboratory.

Université de Bordeaux, Bordeaux: CAS-Theory.

Université de Cergy-Pontoise, Cergy Pontoise Cedex: CAS-Observations.

Université de Lille, Lille: CAS-Laboratory.

Université de Lyon (CRAL), Lyon: GRAVITY+; CAS-Observations.

Université de Rennes, Rennes: CAS-Laboratory; CAS-Observations.

Université de Toulouse, Toulouse: CAS-Observations; CAS-Laboratory.

Université Paris Diderot, Paris: CAS-Observations.

Université Paris-Saclay, Saclay: CAS-Laboratory; CASObservations.

Griechenland

ATHENA RC, Research and Innovation Centre in Information, Communication and Knowledge Technologies, Athen: INODE.

Infil Technologies, Athen: INODE.

University of Crete and Foundation for Research and Technology Hellas (FORTH), Heraklion: Röntgendoppelsternsysteme; OPTIMA Photometer; Röntgen-AGN.

National Observatory of Athens, Athen: Athena; eROSITA.

Großbritannien

John Moores University, Liverpool: Himmelsdurchmusterung Galaxienhaufen; Infrared Dark Clouds; CAS-Observations.

Open University, Milton Keynes: Kataklysmische Variablen; Novae; ATHENA.

Queen's University, Belfast: PanSTARRS.

Queen Mary University of London, London, UK: CAS-Observations; CAS-Theory.

Rutherford Appleton Laboratory, Council for the Central Laboratory of the Research Councils, Swindon: SIS-Junctions.

Jodrell Bank Observatory, Macclesfield: CAS-Observations.

United Kingdom Astronomy Technology Centre (UKATC), Edinburgh: EUCLID; ERIS.

University of Cambridge, Cambridge: DES.

University College London, London: High Energy Pulsars; EUCLID; DES; CAS-Observations.

University of Durham, Durham: PanSTARRS.

University of Leicester, Leicester: XMM-Newton; ATHENA; Swift.

University of Nottingham, Nottingham: DES.

University of Portsmouth, Portsmouth: DES.

University of Sussex, Brighton: DES.

University of Southampton, Southampton: GRAVITY+; Magellanic Clouds.

Indien **Tata Institute of Fundamental Research, Mumbai:** CASObservations.

Irak

University of AL-Muthanna, AL-Muthanna: CAS-Observations.

Irland

National University of Ireland, Galway: High Time Resolution Astronomy; CAS-Theory.

University College Dublin, Dublin: Fermi/GBM.

Israel

School of Physics and Astronomy, Wise Observatory, Tel Aviv: Aktive Galaxien; Interstellares Medium; Galaxienentwicklung.

Italien

Free University of Bozen-Bolzano, Bozen: INODE.

IFCAI-CNR Palermo, Palermo: XMM-Newton Beobachtungen von Neutronensternen und Pulsaren.

INAF (Istituto Nazionale di Astrofisica), Rom: ATHENA, EUCLID.

INAF Arcetri, Florenz: ARGOS; LBT; ERIS; CAS-Observations; CAS-Theory.

INAF Padua, Padua: LBT; MICADO; ERIS.

INAF Roma, Rom: LBT; Nukleare Astrophysik.

INAF Teramo, Teramo: ERIS.

INAF Trieste, Triest: Gamma-Ray Bursts; Fermi/LAT.

INFN Frascati, Frascati: SIDDHARTA.

Osservatorio Astronomico di Brera, Brera: Himmelsdurchmusterung Galaxienhaufen.

Osservatorio Astrofisico di Catania, Catania: CAS-Theory; CAS-Laboratory.

Scuola Normale Superiore, Pisa: CAS-Observations.

University of Edinburgh, Edinburgh: DES; PanSTARRS.

Università Ca' Foscari Venezia, Venedig: CAS-Laboratory.

Università degli Studi di Firenze, Florenz: CAS-Observations; CAS-Theory.

Università degli Studi di Milano, Mailand: CAS-Observations.

Università degli Studi di Torino, Turin: CAS-Observations.

Università di Bologna, Bologna: EUCLID; CAS-Theory; CAS-Laboratory; CAS-Observations.

Università di Perugia, Perugia: CAS-Observations.

Japan

Academia Sinica, Nangang: PFS.

Kavli Institute for the Physics and Mathematics of the Universe, Kashiwa: PFS.

Kobe University, Kobe: CAS-Theory.

National Astronomical Observatory of Japan, Mitaka/ Tokio: CAS-Theory; CAS-Observations; Galaxienentwicklung; PFS.

Institute of Physical and Chemical Research, Saitama: CAS-Observations.

Japan Aerospace Exploration Agency, Sagamihara, Kanagawa: SBNAF.

Tokio Institute of Technology (TITECH), Ookayama: ASCA/XMM-Newton Beobachtungen von AGN.

University of Osaka, Osaka: Astro-H.

University of Tokyo, Tokyo: PFS; CAS-Observations.

University of Tokyo, Institutes for Advanced Study (UTIAS), Tokyo: PFS.

Tohoku University, Sendai: Galaxienentwicklung.

Kanada

University of Toronto, Toronto: CAS-Theory.

Lettland

Ventspils University College, Ventspils: CAS-Theory.

Mexiko

Universidad Nacional Autonoma de México, Ensenada: CAS-Observations.

Niederlande

ESTEC, Noordwijk: XMM-Newton; INTEGRAL; EUCLID; ATHENA; eROSITA.

JIVE Dwingelloo, Dwingelloo: Black Hole Cam.

NOVA (Leiden, Groningen, ASTRON/Dwingelloo, Amsterdam): MICADO; ERIS.

Leiden University, Leiden: CAS-Observations; CAS-Theory; IR/Submm Spectroscopy.

Radboud University, Nijmegen: Black Hole Cam; CASLaboratory.

SRON, Utrecht: Chandra-LETG.

University of Groningen, Kapteyn Institute, Groningen: Rekonstruktion der Dichteverteilung im Universum; EUCLID; Dynamical-Chemical Models; CAS-Theory; CAS-Observations.

Österreich

Institut für Weltraumforschung, Graz: ATHENA WFI.

Universität und TU Wien, Wien: MICADO; ATHENA.

Universität Innsbruck, Innsbruck: MICADO.

Universität Linz, Linz: MICADO.

RICAM Linz, Linz: MICADO.

Polen

Nicolaus Copernicus University, Torun: Pulsars Astronomical Centers; ATHENA.

Space Research Center (CBK), Warschau: ATHENA WFI.

Astronomical Observatory Institute, Poznań: SBNF.

University Zielona Gora, Zielona Gora: OPTIMA.

Portugal

CENTRA Lissabon und Porto, Lissabon: GRAVITY; GRAVITY+.

Observatorio Astronomico de Lisboa, Lissabon: ATHENA.

Russland

Baumann Moscow State Technical University, Moskau: Stark gekoppelte Systeme; Time-domain spectroscopy; CAS-Theory; CAS-Laboratory.

Institute of Astronomy, Moskau: CAS-Theory.

Lebedev Institute of Physics, Moskau: CAS-Theory.

Prokhorov General Physics Institute, Moskau: CAS-Laboratory.

Space Research Institute (IKI) of the Russian Academy of Science, Moskau: eROSITA/Spektrum Röntgen-Gamma.

Skobeltsyn Institute of Nuclear Physics, Moskau: Nukleare Astrophysik; Gamma-

Ray Bursts; AGADE.

Ural Federal University, Jekaterinburg: CAS-Theory.

Schweden

Chalmers University of Technology, Onsala Space Observatory, Onsala: CAS-Observations.

University Lund/Observatory, Lund: OPTIMA.

Schweiz

CERN, Geneva: CAST.

ETH Zürich, Zürich: ERIS.

Observatoire de Genève Sauverny, Genf: ISDC/INTEGRAL; Nukleare Astrophysik; EUCLID.

Swiss Institute of Bioinformatics, Lausanne: INODE.

Universität Basel, Basel: Nukleare Astrophysik.

University of Geneva, Genf: ATHENA.

University of Zurich, Zürich: Infrared Dark Clouds.

Zürcher Hochschule für Angewandte Wissenschaften, Zürich: INODE.

Spanien

Centro de Investigaciones Energeticas, Medioambientales y Tecnologicas, Madrid: DES.

Centro de Astrobiología (CSIC/INTA), Madrid: CAS-Laboratory.

ESAC, Madrid: XMM-Newton Science Operations Center; INTEGRAL Science Operations Center; Herschel; Euclid; SBNAF.

Instituto de Astrofísica de Andalucía (IAA), Granada: SBNAF; ESBO-DS.

Instituto de Astrofísica de Canarias, La Laguna: SBNAF.

Instituto de Ciencias del Espacio, Bellaterra: DES.

Instituto de Ciències de l'Espai, Cerdanyola del Vallès: CAS-Observations.

Institut de Física d'Altes Energies, Barcelona: DES; EUCLID.

Javalambre Physics of the Accelerating Universe Astrophysical Survey (J-PAS), Javalambre: eROSITA follow up.

SIRIS Academic SL, Barcelona: INODE. Universitat Autònoma de Barcelona, Bellaterra: CAS-Observations.

Universidad de Valencia, Department de Astronomia, Valencia: INTEGRAL-Spektrometer SPI.

Universidad de Huelva, Huelva: CAS-Laboratory.

Universidad de Zaragoza, Zaragoza: CAST.

Observatorio Astronómico de Mallorca, Costitx: Novae; Kometen.

Observatorio Astronómico Nacional, Madrid: CAS-Observations.

Südkorea

Seoul National University, Seoul: Hayabusa-2.

Academia Sinica Institute of Astronomy and Astrophysics (ASIAA), Taipei: CAS-Theory; CAS-Observations; PFS.

National Central University, Chungli; PanSTARRS.

Tschechien

Charles University, Prag: SBNAF; Hayabusa-2.

Ungarn

Konkoly Observatory of the Hungarian Academy of Sciences, Budapest: SBNAF.

USA

Argonne National Laboratory, Lemont: DES.

Brookhaven National Laboratory, Upton: strahlenharte JFETElektronik; strahlenharte Detektoren.

Benedictine College, Atchison: CAS-Theory.

California Inst. of Technology, Pasadena: X-ray Survey; PFS.

CfA, Cambridge: ATHENA/WFI; XMM-Newton/Chandra Kalibration.

Clemson University, Clemson: Gamma-Ray Bursts; Nukleare Astrophysik.

Fermilab, Batavia: DES.

Harvard University, Cambridge: PanSTARRS.

Harvard-Smithsonian Center for Astrophysics, Cambridge: CAS-Observations; CAS-Laboratory; CAS-Theory.

Institute for Astronomy, Hawaii, Honolulu: Galaxienentstehung; PanSTARRS; NIR Kamera für Wendelstein.

Johns Hopkins University, Baltimore: PanSTARRS; PFS.

Marshall Space Flight Center, Huntsville: Fermi GammaRay Burst Monitor; XMM-Newton und Chandra Beobachtungen von Neutronensternen, Pulsaren und Supernova-Überresten.

MIT, Cambridge: ATHENA WFI.

NASA/Ames Research Center, Mofett Field (CA): MHD Shocks; SBNAF.

NASA/Goddard Space Flight Center, Greenbelt (MD): INTEGRAL-Spektrometer SPI; Swift.

NASA/Jet Propulsion Laboratory, Pasadena: EUCLID; PFS; CAS-Observations.

National Radio Astronomy Observatory, Charlottesville: CAS-Theory; CAS-Observations.

National Radio Astronomy Observatory, Socorro, New Mexico: CAS-Observations.

National Science Foundation, Arlington: CAS-Observations.

NOAO, Tucson: DES.

Ohio State University, Columbus: DES; LBT.

Pacific Northwest National Laboratory (PNNL), Richland: CAST.

Pennsylvania State University, State College: HETDEX; Swift; ATHENA.

Princeton University, Princeton: PFS; CAS-Theory.

Research Corporation, Tucson: LBT.

San Jose State University, San Jose: MHD shocks.

SLAC, Stanford: CAMP; DES; ATHENA.

Smithsonian Astrophysical Observatory, Cambridge: Chandra-LETGS; PanSTARRS; Röntgendoppelsterne in M31; Athena.

Space Telescope Science Institute, Baltimore: Galaxienentstehung; PanSTARRS;

Turbulence; SBNAF.

Stanford University, Stanford: DES; Fermi/LAT; Fermi/ GBM.

Texas A and M University, College Station: DES; SBNAF.

Texas State University, San Marcos: HETDEX.

University of Arizona, Tucson: Kosmische Strahlung; Planetenentstehung; LBT; ARGOS; CAS-Observations.

University of California, Berkeley: MPG/UCB-Kollaboration; FAST; INTEGRAL-Spektrometer SPI; Superbubbles.

University of California, Santa Cruz: DES.

University of Chicago, Chicago: CAS-Observations; DES.

University of Colorado, Boulder (Co): Superbubbles; CASObservations; Galaxienkerne.

University of Florida, Gainesville: Infrared Dark Clouds.

University of Hawaii, Honolulu, Hawaii: CAS-Theory.

University of Illinois, Urbana-Champaign: DES.

University of Massachusetts, Amherst: CAS-Observations.

University of Michigan, Ann Arbor: DES.

University of Nevada, Las Vegas: CAS-Observations.

University of Pennsylvania, State College: DES.

University of Pittsburgh, Pittsburgh: Galaxienentstehung.

University of Texas, Austin: Galaxienentstehung; HETDEX.

University of Texas, San Antonio: SBNAF.

University of Toledo, Toledo: Galaxienentstehung; CASObservations.

University of Virginia, Charlottesville: CAS-Theory; CASObservations.

University of Wisconsin-Madison, Madison: CAS-Theory.

Yale University, New Haven: CAS-Observations.

6.2 Multinationale Kooperationen

ARGOS - Laserleitstern für das LBT: Arcetri Observatory, Italy; AIP, LSW Heidelberg, MPiA, MPIfR, Germany; University of Arizona, USA.

ASPI - The International Wave Consortium: CNR-IFSI Frascati, Italy; LPCE/CNRS Orleans, France; Dept. of Automatic Control and Systems University of Sheffield, UK.

ATHENA - Advanced Telescope for High Energy Astrophysics: Dänemarks Technische Universität, Dänemark; Nikolaus Kopernikus Astronomical Center, Polen; Universität Wien, Österreich; IWF, Graz; INAF Italy, Italy; CEA Frankreich, Frankreich; University of Leicester, Open University, UK; Institut für Astronomie und Astrophysik Tübingen, Erlangen Centre for Astroparticle Physics (ECAP), Germany; ESA; NOA, Greece; Universität Geneva, Schweiz; Institute for Astrophysics, Portugal; Stanford University, USA.

BOSS - Baryon Oscillation Spectroscopic Survey: SDSSIV Collaboration.

Chandra: Marshall Space Flight Center Huntsville, Massachusetts Institute of Technology Cambridge, Smithsonian Astrophysical Observatory Cambridge, USA; Space Research Institute Utrecht, The Netherlands; Universität Hamburg, Germany.

COSMOS - Cosmological Evolution Survey: INAF-Osservatorio Astronomico di Bologna, INAF-Osservatorio Astronomico di Roma, INAF-Osservatorio Astrofisico di Ar-

etri, INAF/IASF-CNR, Sezione di Milano, IRA-INAF, Bologna, Dipartimento di Astronomia, Universita Padova, Dipartimento di Fisica, Universita degli Studi Roma Tre, Italy; Harvard-Smithsonian Centre for Astrophysics, Cambridge, Dept. of Physics, Carnegie Mellon University, Pittsburg, Institute for Astronomy, University of Hawaii, California Institute of Technology, Pasadena, Dept. of Astronomy, Yale University, USA; INTEGRAL Science Data Centre, Versoix, Switzerland; Laboratoire d'Astrophysique de Marseille, France.

DES - Dark Energy Survey: LMU München, Excellence Cluster Universe, Germany; The Fermi National Accelerator Laboratory (Fermilab), University of Chicago, NOAO, University of Michigan, University of Pennsylvania, University of Illinois at Urbana-Champaign, Ohio State University, Texas AM University, University of California Santa Cruz, Stanford University, SLAC National Accelerator Laboratory, The Lawrence Berkeley National Laboratory, Argonne National Laboratory, USA; University College London, University of Cambridge, University of Edinburgh, University of Portsmouth, University of Sussex, University of Nottingham, UK; Observatorio Nacional, Centro Brasileiro de Pesquisas Fisicas, Universidade Federal do Rio, Brasilien; Instituto de Ciencias dei Espacio, Institut de Fisica d'Altes Energies, Centro de Investigaciones Energeticas Medioambientales y Tecnologicas, Spain.

eBOSS - SDSS-IV Extended Baryon Oscillation Spectroscopic Survey: Carnegie Mellon University (CMU), University of Colorado Boulder, Harvard-Smithsonian Center for Astrophysics Participation Group, Johns Hopkins University, Kavli Institute for the Physics and Mathematics of the Universe, New Mexico State University, New York University, The Ohio State University, Penn State University, University of Utah, University of Wisconsin, Yale University, USA; Max-Planck-Institut fuer Astrophysik (MPA Garching), Max-Planck-Institut für extraterrestrische Physik (MPE), Max-Planck-Institut für Astronomie (MPIA Heidelberg), Germany; National Astronomical Observatories of China, Shanghai Astronomical Observatory, China; United Kingdom Participation Group, University of Portsmouth, UK.

ERIS - Enhanced Resolution Imager and Spectrograph for the VLT: ESO, Germany; ETH Zürich, Switzerland; INAF Arcetri (with OAA, OATe and OAPd), Italy; UKATC Edinburgh, Scotland; NOVA Leiden, The Netherlands.

EinsteinProbe – Chinese Academy of Science, Institute of High Energy Physics, National Astronomical Observatories, China, ESA.

eROSITA - extended Roentgen Survey with an Imaging Telescope Array: AIP Potsdam, Universität Tübingen, Universität Bonn, Universität Erlangen, Universität Hamburg, Reimis-Sternwarte Bamberg, MPA Garching, LMU (USM) München, Germany; IKI Moskau, Russia.

ESBO-DS - European Stratospheric Balloon Observatory – Design Study, EU H2020 project; University of Stuttgart, University of Tübingen, Germany; Swedish Space Corporation, Sweden; Instituto de Astrofisica de Andalucia, Spain.

EUCLID - ESA Mission to map the Dark Energy: ESA; CEA Saclay, LAM, France; University Bologna, INAF, Italy; MSSL, Durham University, UKATC UK; STScI, USA; MPIA Heidelberg, Universität Bonn, Germany.

Fermi/GBM - Fermi Gamma-Ray Burst Monitor: Marshall Space Flight Center Huntsville, University of Huntsville, USA. Fermi/LAT - Fermi Gamma-Ray Large Area Space Telescope: Stanford University Palo Alto, Naval Research Laboratory Washington DC, Sonoma State University Rohnert Park, Lockheed Martin Corporation Palo Alto, University of California Santa Cruz, University of Chicago, University of Maryland Greenbelt, NASA Ames Research Center Moffett Field, NASA Goddard Space Flight Center for High Energy Astrophysics Greenbelt, Boston University, University of Utah Salt Lake City, University of Washington Seattle, SLAC Particle Astrophysics Group Palo Alto, USA; ICTP and INFN Trieste, Instituto Nazionale di Fisica Nucleare Trieste, Italy; University

of Tokyo, Japan; CEA Saclay, France.

GRAVITY - Instrument for VLT Interferometry: MPIA Heidelberg, Universität Köln, ESO Garching, Germany; CENTRA Lisbon and Porto, Portugal; IPAG Grenoble, Observatoire de Paris / Meudon (LESIA), France.

GRAVITY+ - VLT Interferometry upgrade project: MPIA Heidelberg, Universität Köln, ESO Garching, Germany; CENTRA Lisbon and Porto, Portugal; IPAG Grenoble, Observatoire de Paris / Meudon (LESIA), OCA Nice, CRAL Lyon, France; University of Southampton, UK; KU Leuven, Belgium.

HETDEX - Hobby-Eberly Telescope Dark Energy Experiment: University of Texas, Austin, Pennsylvania State University, Texas AM University, USA; AIP Potsdam, LMU, USM, Germany.

INODE - Intelligent Open Data Exploration: Zürcher Hochschule für Angewandte Wissenschaften, Athena RC, Research and Innovation Center in Information, Communication and Knowledge Technologies, Fraunhofer Institute for Computer Graphics Research IGD, Infil Technologies Private Company, Center National de la Recherche Scientifique, SIRIS Academic SL, Swiss Institute of Bioinformatics, Free University of Bozen-Bolzano.

INTAS - Cooperation of Western and Eastern European Scientists: France, Germany, Norway, Russia.

ISDC - INTEGRAL Science Data Centre: Observatoire de Geneva Sauverny, Switzerland; Service d'Astrophysique Centre d'Etudes de Saclay, France; Rutherford Appleton Laboratory Oxon Dept. of Physics University Southampton, UK; Institut für Astronomie und Astrophysik Tübingen Germany; Danish Space Research Institute Lyngby, Denmark; University College Dublin, Ireland; Istituto di Fisica Milano, Istituto die Astrofisica Spaziale Frascati, Italy; N. Copernikus Astronomical Center Warsaw, Poland; Space Research Institute of the Russian Academy of Sciences Moscow, Russia; Laboratory for High Energy Astrophysics GSFC Greenbelt, USA.

INTEGRAL-Spectrometer SPI: Centre d'Etude Spatiale des Rayonnements (CESR) Toulouse, CEA Saclay Gif-surYvette, France; University de Valencia Burjassot, Spain.

LBT - Large Binocular Telescope Project: MPIA Heidelberg, MPIfR Bonn, Landessternwarte Heidelberg Königstuhl, AIP, Germany; University of Arizona, Tucson, Ohio State University, Columbus, Research Corporation, USA; INAF, Italy.

MICADO - Multi-Adaptive Optics Imaging Camera for Deep Observations: ESO, LMU (USM), MPIA Heidelberg, IAG Göttingen, Germany; INAF-OAPD Padova, Italy; A* (an Austrian partnership comprising the University of Vienna, the University of Innsbruck, the University of Graz, and the University of Linz [with RICAM Linz]; specific contributions to MICADO come from Vienna/Innsbruck/ Linz), Austria; NOVA (a federation several astronomical institutes; specific contributions to MICADO come from the University of Groningen, the University of Leiden, and the NOVA optical/infrared instrumentation group based at ASTRON in Dwingeloo), The Netherlands; CNRS/INSU (representing LESIA, GEPI and IPAG), Paris, France; FINCA (University of Turku) Turku, Finland.

MXT - Microchannel X-Ray Telescope for Gamma-Ray Bursts: CEA, Saclay, France; University of Leicester, UK.

OPTIMA: AIP, MPI für Astrophysik, Universität Hamburg, Germany; University of Crete, Greece; University Zielona Gora, Poland; University Lund/Observatory, Schweden.

PanSTARRS - Panoramic Survey Telescope und Rapid Response System: MPIA Heidelberg, Germany, University of Hawaii, Harvard University, Johns Hopkins Univ. Baltimore, MD, USA; Universities of Durham, Edinburgh, Belfast, UK.

PFS - The Subaru Prime Focus Spectrograph Collaboration: Kavli Institute for the Physics and Mathematics of the Universe, California Institute of Technology, NASA

Jet Propulsion Laboratory, Princeton University, Johns Hopkins University, USA; The University of Tokyo Institutes for Advanced Study (UTIAS), University of Tokyo, National Astronomical Observatory of Japan, Academia Sinica, Japan; Institute of Astronomy and Astrophysics (ASIAA), Taiwan; Laboratoire d'Astrophysique de Marseille, France; Brazilian Consortium: IAG Universidad de Sao Paulo, Laboratorio Nacional de Astrofísica, Brazil; Max Planck Society, Max-Planck-Institut für Astrophysik (MPA, Garching), Max-Planck-Institut für extraterrestrische Physik (MPE), Germany; Chinese Consortium: Shanghai Jiao Tong University, National Astronomical Observatories of China, Tsinghua University, The University of Science and Technology of China, Xiamen University, Peking University, China.

SBNAF - Small Bodies Near and Far, EU H2020 project; Poznań, Poland; Instituto de Astrofísica de Andalucía, Granada, Instituto de Astrofísica de Canarias (IAC), Spain; Konkoly Observatory, Budapest, Hungary; Institute of Space and Astronautical Science (ISAS, JAXA), Kanagawa, Japan.

SDSS - Sloan Digital Sky Survey: MPA Garching, MPIA Heidelberg, Germany; Univ. of Washington, Seattle, Fermi National Accelerator Laboratory, Batavia, University of Michigan, Ann Arbor, Carnegie Mellon University, Pittsburgh, Penn State University, University Park, Princeton University Observatory, Princeton, Institute of Advanced Study Princeton, Space Telescope Science Institute, Baltimore, Johns Hopkins Univ. Baltimore, USA.

Swift - Gamma-Ray Burst Mission: NASA/GSFC Greenbelt, Penn State University, USA; University of Leicester, Mullard Space Science Laboratory London, UK; Osservatorio Astronomico Brera, Italy.

XMM-Newton/SSC (Survey Science Center): AIP, Germany; SAP Saclay, CDS Strasbourg, CESR Toulouse, France; University of Leicester, Institute of Astronomy Cambridge, MSSL London, UK.

XMM-Newton/EPIC (European Photo Imaging Camera): SAP Saclay, IAS Orsay, CESR Toulouse, France; University of Leicester, University Birmingham, UK; CNR Mailand Palermo-Bologna-Frascati, Osservatorio Astronomico Mailand, Italy; Institut für Astronomie und Astrophysik Tübingen, Germany

6.3 Industrielle Kollaborationen

3d shape GmbH, Erlangen: Metrology for slumped glass mirror study.

ABN GmbH, Neuried: Ongoing servicing of the MPE test facility PANTER.

AC Tech GmbH, Freiberg: ERIS Konus.

ACM GmbH, Naumburg - Acktar Ltd., Kiryat-Gat, Israel: Schwärzen für EUCLID und ERIS.

af inventions, Braunschweig: FPGA Programmierung für eROSITA.

ALPAO, Montbonnot-Saint-Martin, France: GRAVITY+ deformable mirrors.

Ariane Group GmbH, Munich: EUCLID design study, eROSITA, ATHENA, Oberflächenbeschichtung und cleanliness control EinsteinProbe.

Array Electronics, Egmatung: DAQ development OPTIMA.

Bach Research, Boulder, USA: High resolution grating for ERIS.

BASF Coatings AG, Münster: Investigations on the scattering properties of micro particles.

Bräuninger und Konstruktionen, Neuried: Construction and manufacturing of laboratory equipment.

Buchberger GmbH, Tuchenbach: Manufacturing of parts for PANTER manipulators, ERIS telescope flange.

- Carl Zeiss QEC GmbH, Garching b. München, Deutschland:** Messdienstleistungen, EinsteinProbe.
- Christian Rehm - ISKON, Isen:** Design and mechanical engineering for MICADO.
- CryoVac GmbH, Troisdorf:** MICADO Cryostat; ERIS SPIFFI Upgrade.
- DHL Special services, Flughafen München, EinsteinProbe. Dico-Solutions, München:** eROSITA Betrieb.
- DoKaSch TEMPERATURE SOLUTIONS GmbH, Kelsterbach, Deutschland:** klimatisierte Frachtcontainer, EinsteinProbe.
- ECM Engineered Ceramic Materials GmbH, Moosinning:** Hersteller von CESIC.
- EATON Powering Business Worldwide, Camarillo, CA, USA:** Actuators separation-nuts for eROSITA.
- ESL GmbH, Berlin:** Manufacturing of circuit boards.
- First Light Imaging, Meyreuil, France:** GRAVITY+ wavefront sensor cameras.
- Fraunhofer IOF, Jena:** Mirror development for MICADO.
- Freyer GmbH, Tübingen:** PANTER.
- GEWO Feinmechanik GmbH, Wörth/Hörlkofen:** Mechanische Fertigung, ERIS.
- Gräfe Spezialoptik GmbH, Camburg:** Zerodur-Materialbearbeitung und -Lieferant.
- Hans Englert GmbH, Berlin:** Manufacturing of front panels and metering devices.
- Hembach Photonik, Rednitzhembach,** Optical Design, GRAVITY+.
- HERMLE AG, Gosheim,** Milling Machines, MPE Workshop.
- Hochschule München, Laserlabor, Prof. Heinz Huber, München:** Materialbearbeitung mit Ultrakurzpulsar laser.
- Hyprostatik, Göppingen:** MICADO Hydrostatik.
- Industrieanlagen – Betriebsgesellschaft mbH (IABG), Ottobrunn:** Testanlagen, Luftfahrtsicherheit, EinsteinProbe.
- Industrieberatung Reinhard Katterloher, München:** Specifications for MICADO Test Cryostat.
- Ingenieurbüro Josef Eder, Hilgertshausen:** System engineering for eROSITA, ATHENA, ERIS, Einstein Probe.
- Ingenieurbüro Weisz, München:** Design and mechanical engineering for ERIS and MICADO.
- Ingenieurbüro Michael Kautz, Regensburg,** Design and mechanical engineering for CAS.
- IRIDIAN Spectral Technologies, Ottawa, Ontario, Canada:** ERIS Filters.
- Kampf Telescope Optics (KTO), München:** Design und System Engineering for MICADO.
- Korth Kristalle GmbH, Kiel:** Lenses and windows for ERIS Spectrometer.
- Kinkele GmbH und Co. KG, Ochsenfurt:** ERIS Struktur.
- LaserJob GmbH, Fürstenfeldbruck, Deutschland:** Präzisions-Laserzuschnitt und Schweißen EinsteinProbe.
- LEX GmbH, Miesbach, Deutschland:** Mechanische Fertigung, ATHENA, EinsteinProbe.
- LT Ultra, Herdwangen-Schönach:** Spiegelhersteller.

Feinmechanische Werkstätte Thomas Markl GmbH, Deisenhofen; eROSITA.
Medway Optics Ltd, Rainham, Kent, UK: Optical coatings for ERIS.
M-Industrieverpackung GmbH, Sulzemoos: ERIS Transportcontainer.
OHB System AG, München: EUCLID design study.
Peter Blank GmbH, Aschaffenburg: Mechanische Fertigung MICADO.
Peter Feckl Maschinenbau GmbH, Forstern: Mechanische Fertigung, ERIS, Spiegelmodule EinsteinProbe.
Plappert Industrieanlagen GmbH, Schorndorf: Design and mechanical engineering for MICADO Handling Tools.
Safran Reosc, Saint-Pierre-du-Perray, France: Mirror development MICADO.
Steinmeyer Mechatronik, Dresden: GRAVITY+ translational stages.
Tafelmaier Dünnschicht-Technik, Rosenheim: Optical Coatings, GRAVITY+.
Tyroller Hydraulic GmbH, Waidhofen: MICADO Hydrostatik.
Unholtz-Dickie Corp., Wallingford, USA: Shaker System, MPE Test Facility.

7 Öffentlichkeitsarbeit

Das MPE engagierte sich 2020 durch folgende Aktivitäten in der Öffentlichkeitsarbeit: 29, zum Teil online gehaltene populär-wissenschaftliche Vorträge durch Wissenschaftler, 28 Pressemitteilungen über wissenschaftliche Ergebnisse und 7 allgemeine Nachrichten (wissenschaftliche Preise, Auszeichnungen). Aktivitäten am Institut waren aufgrund der Covid19-Pandemie stark eingeschränkt. Es gab 6 Institutsführungen (meist naturwissenschaftlich orientierte Schulklassen). Ferner wurden am MPE 8 Schüler- (1 - 2 Wochen) und 2 Hochschulpraktikanten (4 - 8 Wochen) betreut. 4 Personen nahmen am Flüchtlingspraktikum (1 - 3 Wochen) teil. Der Girls' Day 2020 musste aufgrund der Covid19-Pandemie entfallen. Ein herausragendes Ereignis war die Verleihung des Physik-Nobelpreises an Direktor Reinhard Genzel am 6. Oktober 2020, infolgedessen die Medienresonanz stark anstieg. In der Woche nach Bekanntgabe des Nobelpreises wurde Reinhard Genzel bzw. das MPE in 12 000 Medienberichten und rund 25 000 mal auf Social Media erwähnt. Bis Ende des Jahres wurden über 100 Medienanfragen beantwortet. Weitere Informationen zur Öffentlichkeitsarbeit: <http://www.mpe.mpg.de>

Paola Caselli