



Reinhard Genzel



Date of Birth 24 March 1952

Place Bad Homburg v.d.H., Germany

Nomination 18 August 2020

Field Physics; Astronomy

Title Director at the Max Planck Institute for Extraterrestrial Physics, Garching, Germany; Nobel Laureate in Physics, 2020

Most important awards, prizes and academies

Awards and Honors: 1970 Alfred Maul Medal, Bertold Gymnasium, Freiburg, Germany; 1973 Scholarship of the "Studienstiftung des Deutschen Volkes", Germany; 1980 Otto Hahn Medal of the Max Planck Society for the Year 1978, Germany; 1980 Miller Fellowship, University of California, Berkeley, USA; 1984 Presidential Young Investigators Award, USA; 1985 Fellow, American Physical Society, USA; 1986 Newton Lacy Pierce Prize, American Astronomical Society, USA; 1990 Leibniz Prize of the German Science Foundation (DFG), Germany; 1998 Foreign Member, Académie des Sciences, Paris, France; 2000 de Vaucouleurs Medal, University of Texas, Austin, USA; 2000 Foreign Associate, US National Academy of Sciences, USA; 2000 Janssen Prize, Société Astronomique de France, Paris, France; 2002 Member of the German Academy of Natural Sciences Leopoldina, Halle, Germany; 2002 Member of the European Academy of Sciences, Liège, Belgium; 2003 Stern Gerlach Medal of the German Physical Society (DPG), Germany; 2003 Member of the Bavarian Academy of Sciences, Munich, Germany; 2003 Balzan Prize for 'Infrared Astronomy', Bern, Switzerland/Italy; 2005 Petrie Prize, Canadian Astronomical Society (CASCA), Victoria, Canada; 2007 Einstein Medal, Albert Einstein Society (AEG), Bern, Switzerland; 2008 Shaw Prize, The Shaw Prize Foundation, Hong Kong, China; 2009 Premio Galileo, Fondazione Premio Galileo 2000, Florence, Italy; 2010 Honorary Doctorate, Leiden University, Leiden, Netherlands; 2010 Foreign Corresponding Member, Real Academia de Ciencias, Madrid, Spain; 2011 Karl Schwarzschild Medal, German Astronomical Society (AG), Germany; 2012 Crafoord Prize in Astronomy, Royal Swedish Academy of Sciences, Sweden; 2012 Tycho Brahe Prize, European Astronomical Society (EAS), Switzerland; 2012 Foreign Member, Royal Astronomical Society, London, UK; 2013 Ordre pour le Mérite (OPLM), Berlin, Germany; 2014 Herschel Medal of the Royal Astronomical Society, London, UK; 2014 Great Cross of Merit (with Star) of Federal Republic of Germany, Berlin, Germany; 2014 Honorary Doctorate (Dr.h.c.), Paris Observatory (OPSPM), Paris, France; 2014 Harvey Prize in Science and Technology, Technion Israel Institute of Technology, Haifa, Israel. *Prize Lectures:* 1987 Spring Lecturer, Princeton University, USA; 1998 Kingsley Professor, Caltech (California Institute of Technology), USA; 1998 Lyman Spitzer Lecturer, Princeton University, USA; 2000 Sackler Lecturer, Princeton University, USA; 2000 Oort Professor, University of Leiden, NL; 2004 Iben Lecturer, University of Illinois, USA; 2005 Rossi Lecturer, Arcetri (Astrophysical Observatory), Italy; 2005 Grubb Parsons Lecturer, University of Durham, UK; 2005 Wolfgang Pauli Lecturer, 100 years 'annus mirabilis', ETH Zürich, Switzerland; 2006 Celsius Lecture, University of Uppsala, Sweden; 2006 Invited Discourse, 26th General Assembly of the International Astronomical Union, Prague, Czech Republic; 2007 George Darwin Lecture, Royal Astronomical Society, London, UK; 2008 Bishop Lecture, Columbia University, USA; 2008 Einstein Lecturer, Free University, Berlin-Dahlem, Germany; 2008 Sackler Lecture, University of Cambridge, UK; 2009 Svein Rosseland Lecture, University of Oslo, Norway; 2010 Cecelia Payne-Gaposchkin Lecture, Harvard Smithsonian Center for Astrophysics, Cambridge, USA; 2010 Jansky Lecturer, National Radio Astronomy Observatory, Charlottesville, USA; 2011 West Lecturer, Queen's University of Belfast, Northern Ireland, UK; 2011 Littrow Lecturer, Austrian Academy of Sciences, Vienna, Austria; 2014 Kavli Lecturer, Norwegian Academy of Sciences, Oslo, Norway; 2015 Harvey Prize Lecturer, Technion, Haifa, Israel; 2015 Thomas Gold Lectureship in Astronomy, Cornell University, Ithaca, USA; 2015 Solvay Lecturer, The Solvay Institutes, Brussels, Belgium. *Memberships:* Academia Europaea (AE); Académie des Sciences (Institut de France), Foreign Member; American Astronomical Society (AAS); American Physical Society

(APS); European Astronomical Society (EAS); German Astronomical Society (AG); German Physical Society (DPG); International Astronomical Union (IAU); Royal Astronomical Society, London (Foreign Member); Royal Spanish Academy of Sciences (Real Academia de Ciencias, Foreign Corresponding Member); USA Academy of Sciences (NAS), International Member. *Current Service*: Chair, SHAW Prize Committee in Astronomy & Member, Board of Adjudicators, Hong Kong, China; Member, IRAM Executive Council, Grenoble, France. *Member of various Visiting Committees*: Member, Advisory Board MPWG-History-MPG, Berlin, Germany; Member Advisory Board, Austrian Academy of Sciences, Vienna, Austria; Member, Advisory Board JAXA-SPICA, Tokyo, Japan; Member, several hiring committees of the Max Planck Society, Germany; Member, LBT Board, USA. Reviewer, *Astrophysical Journal*, *Astronomy & Astrophysics*, German Science Foundation (DFG), *Nature*, US National Science Foundation, NOVA (The Netherlands), German Academy Leopoldina, Swiss National Fond., Smithsonian Institution, Swedish Research Council, Australian Research Council.

Summary of scientific research

Cosmological Formation and Evolution of Galaxies, Massive Black Holes, Star Formation in Galaxies, The Galactic Center, Infrared, Submillimeter and Millimeter Spectroscopy and High Resolution Imaging, Adaptive Optics, Radio and Infrared Spatial Interferometry, Development of Infrared Instrumentation for Ground-Based and Space Telescopes.

Main publications

Schödel R., Ott T., Genzel R., Hofmann R., Lehnert M., Eckart A., Mouawad N., Alexander T., Reid M.J., Lenzen R., Hartung M., Lacombe F., Rouan D., Gendron E., Rousset G., Lagrange A.-M., Brandner W., Ageorges N., Lidman C., Moorwood A.F.M., Spyromillo J., Hubin N., and Menten K.M., 2002. 'A Star in a 15.2-Year Orbit Around the Supermassive Black Hole at the Centre of the Milky Way', *Nature* 419, 694-696; Genzel R., Lutz D., Sturm E., Egami E., Kunze D., Moorwood A.F.M., Rigopoulou D., Spoon H.W.W., Sternberg A., Tacconi-Garman, L.E., Tacconi L., and Thatte N., 1998. 'What Powers Ultra-Luminous IRAS Galaxies?', *Ap.J.* 498, 579; Gravity Collaboration: Abuter, R., Amorim, A., Anugu, N.; Bauböck, M., Benisty, M., Berger, J.P., Blind, N., Bonnet, H., Brandner, W., et. Al., 2018. 'Detection of the gravitational redshift in the orbit of the star S2 near the Galactic centre massive black hole', *A&A* 615, id.L15, (10 pp); Gravity Collaboration, Abuter R., Amorim A., Bauböck M., Berger J.P., Bonnet H., Brandner W., Clénet Y., Coudé Du Foresto V., de Zeeuw P.T., Genzel R., et. Al. 2019. 'A geometric distance measurement to the Galactic center black hole with 0.3% uncertainty', *A&A*, 625, id.L10, (10 pp); Tacconi L., Genzel R., Neri R., Cox P., Cooper M.C., Shapiro K., Bolatto A., Bouché N., Bournaud F., Burkert A., Combes F., Comerford J., Davis M., Förster Schreiber N.M., S. Garcia-Burillo, Grácia-Carpio J., Lutz D., Naat T., Omont A., Shapely A., Sternberg A., and Weiner B., 2010. 'High Molecular Gas Fractions in Normal Massive Star-Forming Galaxies in the Young Universe', *Nature* (Lett.) 463, 781-784; Förster Schreiber N.,M. Genzel R., Bouché N., Cresci G., Davies R.I., Buschkamp P., Shapiro K.L., Tacconi L.J., Hicks E.K.S., and Genel S., 2009. 'The SINS Survey: SINFONI Integral Field Spectroscopy of $z \sim 2$ Star-forming Galaxies'. *Ap. J.* 706, 1364-1428; Genzel R., Eisenhauer F., Gillessen S., 2010. 'The Galactic Center Massive Black Hole and Nuclear Star Cluster', *Reviews of Modern Physics* 82, 3121-3195; Gravity Collaboration, Abuter R., Amorim A., Bauböck M., Berger J.P., Bonnet H., Brandner W., Clénet Y., Coudé Du Foresto V., de Zeeuw P.T., et. Al., 2018. 'Detection of orbital motions near the last stable circular orbit of the massive black hole SgrA*', *A&A* 618, id.L10, (15 pp); Tacconi L., Genzel R., Sternberg A. 2020. 'The Evolution of the Star-forming Interstellar Medium across Cosmic Time. ARAA, in press; Gillessen, S., Eisenhauer, F., Trippe, S., Alexander, T., Genzel, R., Martins, F., and Ott, T., 2009. Monitoring Stellar Orbits around the Massive Black Hole in the Galactic Center', *Ap. J.* 692, 1075-1109; Gravity Collaboration, Abuter R., Accardo M., Amorim A., Anugu N., Ávila G., Azouaoui N., Benisty M., Berger J.P., Blind N, et al., 2017. 'First light for GRAVITY: Phase referencing optical interferometry for the Very Large Telescope Interferometer', *A&A.*, 602, A94 (23 pp).