Curriculum Vitae of Prof. Dr. Henrik Beuther

Date of Birth:	May 10th, 1971, Cologne/Germany	
Nationality:	German	
Marital Status:	Married since June the 15th, 2001, with Christina Beuther (birth name: Jürgens); 3 children: Johann *10th Dec. 2003, Elisa *28th April 2005, Philip *5th Oct. 2007.	

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National Service: 10/1990–9/1991 Navy: Navigation of Minesweepers in the Baltic Sea

Education:	10/1992–2/1999	Physics Diploma (summa cum laude), University of Cologne, Thesis: *On-the-fly mapping and multi-line analysis of the interstellar molecular cloud Cepheus B*
	4/1999–3/2002	PhD (summa cum laude) at the Max-Planck-Institute for Radioastronomy and the University of Bonn, Thesis: *Early stages of massive star formation*
	July 2008	Habilitation at the University of Heidelberg
	Sept. 2013	Associate Professor at the University of Heidelberg

Employment:	4/2002–3/2003	Post-Doc at the Max-Planck-Institute for Radioastronomy, Bonn
	4/2003–8/2005	Post-Doc at the Harvard-Smithsonian Center for Astrophysics, Cambridge Emmy-Noether Fellow of the Deutsche Forschungsgemeinschaft
	9/2005–9/2009	Head of the Emmy-Noether Research Group "The Formation of Massive Stars" at the Max-Planck-Institute for Astronomy, Heidelberg
	9/2009–	Scientific staff member of the Max-Planck-Institute for Astronomy

Research exp.: **High-mass star formation:** Study the physics and chemistry of the earliest stages of massive star formation. Investigate the properties of molecular outflows, large- and small-scale dust and gas emission, accretion disks, chemical characteristics of massive cores, initial core fragmentation, and magnetic field properties.
Low-mass star formation: Molecular outflows/jets and their association with the accretion disks. Physical and chemical properties of starless cores.
Molecular cloud studies: Multi-line studies and modeling of molecular cloud conditions at the interface with star-forming regions. Atomic to molecular gas transition. Cloud collapse. Feedback processes from HII regions to the ISM.
Extragalactic star formation: Masers in external galaxies. Star formation in bar-spiral interfaces and the vicinity of black holes.
Observational experience:
Interferometers: ALMA, IRAM PdBI/NOEMA, SMA, (E)VLA, ATCA, CARMA;
Single-dishes: IRAM 30m, Eff. 100m, CSO, JCMT, KOSMA, APEX, Nobeyama 45 m, VLT;
Space telescopes: Spitzer, Chandra, Herschel, SOFIA;

Awards:
- 10/2000–3/2002: Fellowship of the German National Science Foundation (DFG) in program 471 *Physics of Star Formation.*
- Dec. 2002: Emmy-Noether fellowship (phase I) from the German Science Foundation (DFG) to work at the Harvard-Smithsonian Center for Astrophysics

(Cambridge/USA) for two years (04/2003 – 03/2005).
• Oct. 2002: Feodor-Lynen fellowship from the Humboldt foundation (declined)
• Dec. 2004: Emmy-Noether fellowship (phase II) from the German Science Foundation (DFG) to build a Junior research group at the Max-Planck-Institute for Astronomy/Heidelberg (started 09/2005).
• September 2007: Ludwig-Biermann Förderpreis of the German Astronomical Society (german equivalent to AAS Newton Lacy Pierce early career price).
• 2011: Sub-project for PhD student in Heidelberg SFB "The Milky Way" (phase I).
• 2013: Awarded Associated Professorship at University of Heidelberg
• 2014: Sub-project for PhD student in Heidelberg SFB "The Milky Way" (phase II).
• 2015: Awarded ERC Consolidator Grant
• 2018: Sub-project for PhD student in Heidelberg SFB "The Milky Way" (phase III).

Some scientific highlights:

• h-index=49, ADS citation count 9272 (as of August 2020).
• >50 refereed first author publications with >3163 citations (two >400 citations).
• Established that molecular outflows from massive star-forming regions are qualitatively similar to their low-mass counterparts, just with significantly enhanced energetics. → Similar formation scenarios (Beuther+ 2002, 2004).
• Resolving a massive young cluster in cold dust emission into its sub-sources at a very early evolutionary stage. The resulting core mass function resembles the IMF. → The IMF is consistent with early fragmentation (Beuther & Schilke 2004).
• Analyzing the kinematics of the dense circum-protostellar gas. → Evidence for rotationally supported disk-like structures (e.g., Beuther+ 2004, 2009, 2013, 2017a,b).
• Combining high-spatial resolution mm and mid-infrared data (PdBI, Spitzer, Herschel, Sofia) for Infrared Dark Clouds (IRDCs). → Constraining the physical conditions at the onset of massive star formation (Beuther+ 2005, 2007, 2010, 2012, 2014, 2015a,b).
• Spatially resolving chemical diversity in massive star-forming regions. → This is important for the chemistry itself and allows us to use molecules as tools to study the physical processes (e.g., Beuther+ 2005, 2007, 2009, Gerner et al. 2014, 2015, Feng et al. 2016).
• Constraining magnetic fields in massive cores and outflows (Beuther+ 2010, 2018).
• Analyzing Milky Way structure from ATLASGAL survey (Beuther+ 2012).
• Conducting Galactic Plane survey THOR about HI, OH & ionized gas (Beuther+ 2016).
• Constraining extragalactic bar-spiral interaction in NGC3627 (Beuther+ 2017).
• Deriving fragmentation properties in high-mass star formation (Beuther+ 2018, 2019).

Large projects:

• Co-PI of Max-Planck-IRAM-Observatory program (MIOP) on Cygnus X.
• Steering group member of ALMA large program ALMAGAL.
• Member of European JWST/MIRI science consortium and GTO project on protostars.
• PI of IRAM PdBI/NOEMA large program "CORE: Fragmentation and disk formation during high-mass star formation", http://www.mpia.de/thor.
• PI of VLA large program "THOR: The HI/OH/Recombination line survey of the Milky Way", http://www.mpia.de/core.
Member of Sofia large program FEEDBACK.
• Member of ESO/MPG large program SEDIGISM at APEX.
• Member of ESO/MPG large program ATLASGAL at APEX.
• Member of Herschel key project EPOS "The earliest phases of star formation".

Teaching exp. & additional qualification:

• Associate Professor at University Heidelberg.
• Lectures at several summer schools.
• Supervision of ten PhD, four Master and four Bachelor students.

• Main organizer of the international conference "Massive Star Formation: Observations confront theory" in the Heidelberg Convention Center with 250 participants, Sept. 2007.
• Main Organizer of the international conference "Protostars and Planets VI" with 850 participants in Heidelberg, July 2013
• (Co-)organizing meetings with 50 to 100 participants at CfA, MPIA and NAM2012.
• Refereeing 3-5 papers in int. journals per year (e.g., Nature, ApJ, A&A, MNRAS).
• ESO program panel member 2008/2009.
• MPG APEX Time Allocation Committee member since 2008.
• IRAM program committee member 2009-2014.
• ALMA program committee member since 2015
• ERC, DFG and ANR referee.
• Member of German Science Sofia Working Group (GSSWG).
• Member of German Astronomical Society (AG).
• MPIA institute representative in the CPT section of the MPG (2013-2019).