

Curriculum vitae

Full Name: Theresa Beatrice Veronica van Vliet Wiegert
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Webpage: <https://twiegert.weebly.com/>,
Citizenship: Sweden, Canada
Languages: Fluent in both spoken and written Swedish and English, good knowledge of French, fair knowledge of Dutch and German.

Education

- **Doctor of Philosophy degree in Astrophysics**, Dept. of Physics & Astronomy, University of Manitoba, Feb 2004 – Dec 2010. Thesis title “*Spiral galaxy HI models, rotation curves and kinematic classifications*”. <http://hdl.handle.net/1993/4377> Supervisor: Dr. Jayanne English
- **Master of Science degree in Physics**, Dept. of Physics, Göteborgs Universitet, Sweden, Jun 2002 - Jun 2003, thesis title: “*Galaxy Evolution, the Deepest View of the Universe*”. Supervisor: Dr. Duilia F. de Mello, co-supervisor: Dr. Cathy Horellou
- Course work in parallel with the Physics Engineering program (combined to an equivalent of an undergraduate degree in Physics), Göteborgs Universitet, Sweden, Aug 1996 - May 2001
- Physics Engineering program studies, combined to the equivalent of an undergraduate and MSc degree in Physics at Göteborgs Universitet, Chalmers, Göteborg, Aug 1995 - May 2001
- Elof Lindälvs Gymnasium, Kungsbacka, 1992 - 1995 High School diploma in Natural Sciences. Thesis: *Radioastronomy*

Other relevant courses

- NAIC/NRAO Single Dish Summer School, July 2013, Arecibo observatory
- ALMA workshop, University of Toronto, April 2011
- NRAO Radio Synthesis Summer School, VLA and University of New Mexico, June 2006
- The Vatican Observatory Summer School, Italy, 2003, Topic: *Galaxy evolution*

Research interests

Galaxy formation and evolution, galaxy kinematics, properties of disk galaxies; neutral hydrogen content, 'communication' between the disk and the gaseous halo, including the magnetic fields (radio continuum).

Academic/research work history

- Part-time pro-bono research/ pertaining to the project of my postdoc at Queens (2015 - present time),
- Postdoctoral fellow at Dept. of Physics, Engineering physics & Astronomy, Queen's University, Sep 1 2011 - Aug 30, 2014, supervisor Dr. Judith Irwin - radio continuum VLA observations and data handling.
- Assisted updating the online observation manual on low frequency observing, NRAO, Socorro, 2012, with Dr. E. Momjian

Teaching experience

- Adjunct lecturer for PHYS 315, a 3rd yr undergraduate astrophysics course at Queens U., including constructing an observational project of measuring photometric redshifts for galaxies.
- Science Quest astronomy outreach for young children (grades 4-6), summers of 2012, 2013
- Student co-supervision: Yang Yang (PhD student, spring-summer 2014), Scott MacDonald (summer student, summer 2014), Philip Schmidt, Carolina Mora, Yelena Stein (PhD students, while at NRAO), Kurtis Dekker (under-graduate thesis project), Stephen MacGregor (summer student), 2012-2013

- Teaching Assistant, teaching 1st year physics and astronomy labs, Department of Physics & Astronomy, University of Manitoba, supervisor: Ian Cameron, 2004-2009
- Invited lectures and occasionally substituting lectures in 1st and 2nd year astronomy courses, 2006 - 2009, Department of Physics & Astronomy, University of Manitoba, supervisors: Dr. Jayanne English, Dr. Jennifer West
- Let's Talk Science outreach for grades K-12 on various science topics, 2005-2009

Observing experience

- VLA: Continuum radio observations, Sep 2011 - May 2012 (406 hours in C and L-band, at B, C and D configurations), 2016 and 2020 (S-band)
- ATCA: Assisted radio HI observations for Dr. B. Koribalski (visitor), 2009
- AAT: fiber spectroscopy and optical imaging (visitor), 2009
- JCMT: Sub-mm 13CO(3-2) observations for the "Nearby Galaxies Legacy Survey" project during 2007-2008, (PI: Dr. Christine Wilson)
- OSO 20m: Spectral line observations, Onsala Space Observatory, 2002.

Talks and public appearances

- "*Pilot S-band observations of six CHANG-ES galaxies*", Virtual radio halos of galaxies workshop, July 2020
- "*Tidal disruption events in NGC 660 & NGC 4845*", Radio halos of galaxies workshop, Calgary, AB, August 2018
- "*The first CHANG-ES data release*", Radio halos of galaxies workshop, Madison WI, July 2016
- "*From the sun to the galaxies, and beyond*", invited public outreach talk, Brockville, Jan 2016
- "*NGC 3735 & NGC 3877 - a tale of two CHANG-ES survey sweethearts*" Radio halos in galaxies workshop Bonn, 2015
- "*D-configuration C & L-band observations and results*", Radio halos in galaxies workshop, Kingston Ontario, 2014
- "*In the footsteps of agent 007 at the Arecibo Observatory*", Queen's Observatory (invited public talk), Oct 2013
- "*NGC 3735 - first radio continuum results*", Radio halos in galaxies conference, Leiden, 2013
- "*Reducing data using CASA*", Radio halos in galaxies conference, Leiden, 2013
- Data reduction workshop - organizer, Radio halos in galaxies conference, Leiden, 2013
- "*Adventures at the Karl G. Jansky Very Large Array*", invited public talk at Queen's observatory, Jan 2013
- "*Observing edge-on galaxies with the Karl G. Jansky Very Large Array*" Queen's University and University of New Mexico, (two invited talks), Mar and Apr 2012
- "*Spiral galaxy HI models, rotation curves and kinematic classifications*", conference talk on PhD thesis results at Canadian Astronomical Society meeting, London, Canada, June 2011
- Participated as astronomer in children's TV show "Planet Echo", episode "*Great balls of fire*", broadcast Jan 2011 on APTN (see <http://www.youtube.com/watch?v=6B7V9DwMztU>)
- NSERC workshop for teachers on science and astronomy at the Manitoba Museum, August 2008 (invited talk)
- "*Observing with the JCMT*", Royal Astronomical Society of Canada (RASC) meeting, (Invited public talk), Aug 2008
- "*Detecting Dark Matter?*", RASC meeting, (invited public talk), May 2006

List of Publications

Press release:

"VLA Reveals Spectacular "Halos" of Spiral Galaxies", in conjunction with the publication of CHANG-ES IV and the Data Release I, Oct 2015, <https://public.nrao.edu/news/pressreleases/galaxy-halos>

Refereed papers:

Upcoming:

Secular evolution in the nearest tidal disruption event, E. Perlman et al., in prep.

CHANG-ES XXIV: Radio continuum emission of 35 edge-on galaxies observed with the Karl G. Jansky Very Large Array in C-configuration — Data Release 4, R. Walterbos, et al. in prep.

CHANGES XXIII: Influence of a Cosmic Ray Driven Wind in NGC 5775, G. H. Heald, V. Heesen, S. S. Sridhar, R. Beck, D. J. Bomans, K. T. Chyzy, A. Damas-Segovia, R.-J. Dettmar, J. English, R. Henriksen, S. Ideguchi, J. Irwin, M. Krause, J. Li, E. J. Murphy, B. Nikiel-Wroczyński, J. Piotrowska, R. J. Rand, T. Shimwell, Y. Stein, C. J. Vargas, Q. D. Wang, R. J. van Weeren, and **T. Wiegert**, submitted to MNRAS

Accepted/Published:

CHANGES XXII: Coherent Magnetic Fields in the Halos of Spiral Galaxies, M. Krause, J. Irwin, P. Schmidt, Y. Stein, A. Miskolczi, S. C. Mora-Partiarroyo, **T. Wiegert**, R. Beck, J. M. Stil, G. Heald, J. Li, A. Damas-Segovia, C. J. Vargas, R. J. Rand, J. West, R. A. M. Walterbos, R.-J. Dettmar, J. English & A. Woodfinden, *A&A* 639, A112 (2020)

CHANGES XXI: Transport Processes and the X-shaped magnetic field of NGC 4217 — off-centre superbubble structure, Y. Stein, R.-J. Dettmar, R. Beck, J. Irwin, **T. Wiegert**, A. Miskolczi, Q.D. Wang, J. English, R. Henriksen, M. Radica, and J. Li, *A&A*, vol. 639, A111 (2020)

CHANG-ES XX: High Resolution Radio Continuum Images of Edge-on Galaxies and their AGNs — Data Release 3, J. Irwin, **T. Wiegert**, A. Merritt, M. Weżgowiec, L. Hunt, A. Woodfinden, Y. Stein, A. Damas-Segovia, J. Li, Q. D. Wang, M. Johnson, M. Krause, R.-J. Dettmar, J. Im, P. Schmidt, A. Miskolczi, T. T. Braun, D. J. Saikia, J. English, M. L. A. Richardson, *AJ* Vol. 158, 1 (2019)

CHANG-ES XIX: The galaxy NGC 4013 – a diffusion-dominated radio halo with plane-parallel disk and vertical halo magnetic fields, Y. Stein, R.-J. Dettmar, M. Weżgowiec, J. Irwin, R. Beck, **T. Wiegert**, M. Krause, J.-T. Li, V. Heesen, A. Miskolczi, S. MacDonald, J. English, submitted to *A&A*, 2019

CHANGES XVIII: The CHANG-ES Survey and Selected Results, J. Irwin, A. Damas-Segovia, M. Krause, A. Miskolczi, J. Li, Y. Stein, J. English, R. Henriksen, R. Beck, **T. Wiegert**, R.-J. Dettmar, accepted for publication in *Galaxies: "New Perspectives on Galactic Magnetism"*, eds. A. Mao and A. Fletcher

CHANG-ES XVI: An In-Depth View of the Cosmic-ray Transport in the Edge-on Spiral Galaxies NGC 891 and NGC 4565, P. Schmidt, M. Krause, V. Heesen, A. Basu, R. Beck, **T. Wiegert**, J. A. Irwin, G. Heald, R. J. Rand, J. Li, and E. J. Murphy, Accepted by *Astronomy & Astrophysics*, 2019

CHANG-ES XV: Large-scale magnetic field reversals in the radio halo of NGC 4631, S. C. Mora-Partiarroyo, M. Krause, A. Basu, R. Beck, **T. Wiegert**, J. Irwin, R. Henriksen, Y. Stein, C. J. Vargas, V. Heesen, R. A. M. Walterbos, R. J. Rand, G. Heald, J. Li, P. Kamieneski, J. English, submitted to *Astronomy & Astrophysics*, 2019

CHANG-ES XIV: CHANG-ES XIV: Cosmic-ray propagation and magnetic field strengths in the radio halo of NGC 4631, S. C. Mora-Partiarroyo, M. Krause, A. Basu, R. Beck, **T. Wiegert**, J. Irwin, R. Henriksen, Y. Stein, C. J. Vargas, V. Heesen, R. A. M. Walterbos, R. J. Rand, G. Heald, J. Li, P. Kamieneski, J. English, submitted to *Astronomy & Astrophysics*, 2019

CHANG-ES XIII: Transport processes and the magnetic fields of NGC 4666 - indication of a reversing disk magnetic field, Y. Stein, R.-J. Dettmar, J. Irwin, R. Beck, M. Weżgowiec, A. Miskolczi, M. Krause, V. Heesen, **T. Wiegert**, G. Heald, R.A.M. Walterbos, J. Li, and M. Soida, *Astronomy & Astrophysics*, 623, A33 (2019)

CHANG-ES – XI. Circular polarization in the cores of nearby galaxies, Irwin, J., Henriksen, R., Weżgowiec, M., Damas-Segovia, A., Wang, Q. D., Krause, M., Heald, G., Dettmar, R.-J., Li, J., **Wiegert, T.**, Stein, Y., Braun, T., Im, J., Schmidt, P., Macdonald, S., Miskolczi, A., Merritt, A., Mora-Partiarroyo, S. C., Saikia, D. J., Sotomayor, C., Yang, Y., 2018, *Monthly Notices of the Royal Astronomical Society*, 476, 5057 (2018)

CHANG-ES X: Spatially Resolved Separation of Thermal Contribution from Radio Continuum Emission in Edge-on Galaxies, Vargas, C. J.; Mora-Partiarroyo, S. C.; Schmidt, P.; Rand, R. J.; Stein, Y.; Walterbos,

R. A. M.; Wang, Q. D.; Basu, A.; Patterson, M.; Kepley, A.; Beck, R.; Irwin, J.; Heald, G.; Li, J.; **Wiegert, T.**, *The Astrophysical Journal*, 853, 128 (2018)

CHANG-ES. IX. Radio scale heights and scale lengths of a consistent sample of 13 spiral galaxies seen edge-on and their correlations, Krause, M.; Irwin, J.; **Wiegert, T.**; Miskolczi, A.; Damas-Segovia, A.; Beck, R.; Li, J.; Heald, G.; Müller, P.; Stein, Y.; Rand, R. J.; Heesen, V.; Walterbos, R. A. M.; Dettmar, R. J.; Vargas, C. J.; English, J.; Murphy, E., *Astronomy & Astrophysics*, 611, 72 (2018)

CHANG-ES VIII: Uncovering Hidden AGN activity in radio polarization, Irwin, J. A.; Schmidt, P.; Damas-Segovia, A.; Beck, R.; English, J.; Heald, G.; Henriksen, R. N.; Krause, M.; Li, J.; Rand, R. J.; Wang, Q. D.; **Wiegert, T.**; Kamienieski, P.; Paré, D.; Sullivan, K., *Monthly Notices of the Royal Astronomical Society*, 464, 1333 (2017)

CHANGES VII: Magnetic Outflows from the Virgo Cluster Galaxy NGC4388 – Damas-Segovia, A.; Beck, R.; Vollmer, B.; **Wiegert, T.**; Krause, M.; Irwin, J.; Weżgowiec, M.; Li, J.; Dettmar, R.-J.; English, J.; Wang, Q. D., *The Astrophysical Journal*, Volume 824, Issue 1, article id. 30, pp. (2016)

CHANGES VI: Probing Supernova Energy Deposition in Spiral Galaxies Through Multi-Wavelength Relationships, J. Li; R. Beck; R.J. Dettmar; G. Heald; J. Irwin; M. Johnson; A. Kepley; M. Krause; E. J. Murphy; E. Orlando; R. J. Rand; A. W. Strong; C. J. Vargas; R. Walterbos; Q. D. Wang; **T. Wiegert**, *Monthly Notices of the Royal Astronomical Society*, Volume 456, Issue 2, p.1723-1738

CHANG-ES V: Nuclear Radio Outflow in a Virgo Cluster Spiral after a Tidal Disruption Event, Irwin, J. A.; Henriksen, R. N.; Krause, M.; Wang, Q. D.; **Wiegert, T.**; Murphy, E. J.; Heald, G.; Perlman, E., *The Astrophysical Journal*, Volume 809, Issue 2, article id. 172, 26 pp. (2015)

CHANG-ES. IV: Radio Continuum Emission of 35 Edge-on Galaxies Observed with the Karl G. Jansky Very Large Array in D Configuration—Data Release 1, **T. Wiegert**, J. Irwin, A. Miskolczi, P. Schmidt, S. C. Mora, A. Damas-Segovia, Y. Stein, J. English, R.J. Rand, I. Santistevan, R. Walterbos, M. Krause, R. Beck, R.-J. Dettmar, A. Kepley, M. Weżgowiec, Q. D. Wang, G. Heald, J. Li, S. MacGregor, M. Johnson, A.W. Strong, A. DeSouza, T. A. Porter, *The Astronomical Journal*, Volume 150, Issue 3, article id. 81, 23 pp. (2015)

Kinematic classification of non-interacting spiral galaxies, **T. Wiegert**, J. English, *New Astronomy*, Vol 26, Jan 2014, 40–61

CHANG-ES III: UGC10288 – An Edge-on Galaxy with a Background Double-lobed Radio Source, J. Irwin, M. Krause, J. English, R. Beck, E. Murphy, **T. Wiegert**, G. Heald, R. Walterbos, R. Rand, T. Porter, *the Astronomical Journal*, 146, 1641, 2013

Continuum Halos in Nearby Galaxies: An EVLA Survey (CHANG-ES). II. First Results on NGC 4631, Irwin, J.; Beck, R.; Benjamin, R. A.; Dettmar, R.-J.; English, J.; Heald, G.; Henriksen, R.; Johnson, M.; Krause, M.; Li, J.-T.; Miskolczi, A.; Mora, S. C.; Murphy, E. J.; Oosterloo, T.; Porter, T. A.; Rand, R. J.; Saikia, D. J.; Schmidt, P.; Strong, A. W.; Walterbos, R.; Wang, Q. D.; **Wiegert, T.**, *The Astronomical Journal*, Vol. 144, Issue 2, article id. 44, 13 pp., 2012

Continuum Halos in Nearby Galaxies: An EVLA Survey (CHANG-ES). I. Introduction to the Survey, Irwin, J. Beck, R., Benjamin, R.A., Dettmar, R.-J., English, J., Heald, G., Henriksen, R.N., Johnson, M., Krause, M., Li, J.-T., Miskolczi, A., Mora, S.C., Murphy, E.J., Oosterloo, T., Porter, T.A., Rand, R.J., Saikia, D.J., Schmidt, P., Strong, A.W., Walterbos, R., Wang, Q.D., **Wiegert, T.**, *The Astronomical Journal*, Volume 144, Issue 2, article id. 43, 9 pp. 2012

The DiVA's Mask: Iconifying Galaxies and Revealing HI Anomalies, English, J.; Fiege, J.; **Wiegert, T.**; Koribalski, B.; Kerzendorf, W.; Freeman, K. C., 2010, *Galaxies and their Masks*, 105, SPRINGER

Assessing the galaxy population out to $z \sim 2$ using the Hubble Deep Field South, **Wiegert, T.**, de Mello, D.F., Horellou, C., 2004, *A & A*, 426, 455, astro-ph/0407156.

Additionally a number of papers for the Nearby Galaxies Legacy Survey of which I am a co-author, are listed below (truncated due to long author lists):

The JCMT Nearby Galaxies Legacy Survey - VIII. CO data and the $L_{CO(3-2)}$ - L_{FIR} correlation in the SINGS sample, Wilson, C.D.; Warren, B. E.; et al., MNRAS, Volume 424, Issue 4, pp. 3050-3080, 2012

The JCMT Nearby Galaxies Legacy Survey V: The CO(J=3-2) Distribution and Molecular Outflow in NGC 4621, J. A Irwin, C. D. Wilson, T. Wiegert, et al., 2011, MNRAS, 410, 1423

The JCMT Nearby Galaxies Legacy Survey - IV. Velocity dispersions in the molecular interstellar medium in spiral galaxies, Wilson, C. D., Warren, B. E., Irwin, J., et al., 2011, MNRAS, 410, 1409

The JCMT Nearby Galaxies Legacy Survey - III. Comparisons of cold dust, polycyclic aromatic hydrocarbons, molecular gas and atomic gas in NGC 2403, G. J. Bendo, C. D. Wilson, et al., 2010, MNRAS, 402, 1409

The JCMT Nearby Galaxies Legacy Survey II: Warm Molecular Gas and Star Formation in Three Field Spiral Galaxies, B. E. Warren, C. D. Wilson, et al., 2010, arXiv:1003.1751

The James Clerk Maxwell Telescope Nearby Galaxies Legacy Survey. I. Star-Forming Molecular Gas in Virgo Cluster Spiral Galaxies, C. D. Wilson, B. E. Warren, et al., 2009, Astrophysical Journal, 693, 173

Posters:

Mass models and parametric kinematic models of nearby edge-on spiral galaxies, Wiegert, T., English, J., Fiege, J., Cardigan Smith, B., Swaters, R., Canadian Astronomical Society (CASCA) meeting in Victoria, 2008

A kinematic study of nearby spiral galaxies, Wiegert, T., English, J., Fiege, J., Champion, H., Swaters, R. Presented at the American Astronomical Society and CASCA meetings in Calgary, 2006

Rotation Curves – revealing the hidden nature of galaxies: the first stages, Wiegert, T., English, J., Fiege, J., Swaters, R., CASCA meeting in Montreal, 2005

A gallery of galaxies in the Hubble Deep Field South, Wiegert, T., de Mello, D.F., Horellou, C., Astronomdagar in Lund and CASCA meeting in Winnipeg, 2004

A New Interactive Database of High-Redshift Galaxies, American Astronomical Society Meeting (Seattle, 2003), 201, #09.06. Wiegert, T., de Mello, D.F., Horellou, C. 2002AAS...201.0906W, 2003

Previous employment

- Adjunct lecturer at Dept. of Physics, Engineering physics & Astronomy, Queen's University, fall 2019
- Postdoctoral fellow at Dept. of Physics, Engineering physics & Astronomy, Queen's University, Sep 1 2011 - Aug 30, 2014, supervisor Dr. Judith Irwin
- Site coordinator for the Let's Talk Science Partnership Program: Coordinated a science outreach program involving 80 volunteers and about 50 schools or educators, Faculty of Science, University of Manitoba, supervisors: Dr. E. Worobec (vice Dean of Science), Sue McKee (2005-2008) and Isabel Deslauriers (2008-2009) (National Coordinators of Let's Talk Science), 2005-2009
- Teaching Assistant, University of Manitoba, 2004-2009, in a range of physics and astronomy courses
- Slottsskogen Observatory, guided the exhibition and the night sky for the general public, 2001-2004
- Colt Ballongflyg, driving and scheduling for commercial hot-air ballooning, teaching passengers to unpack and pack a hot-air balloon, 2001-2003
- Ny Teknik, student reporter for a Swedish magazine of technology, 2000-2001
- Arla Foods, dairy storage work during two summers, 1999-2000
- Norra Hallands Veckoblad, local Swedish newspaper, writing occasional stories, 1999 - 2003

Committee experience

- Science organizing committee (SOC) member for the final 'Radio Halos of Galaxies' meeting in Albuquerque, USA, July 2020 (changed to a virtual meeting)

- Local organizing committee chair of application for hosting an IAU symposium in Kingston 2020
- SOC member for the sixth 'Radio Halos of Galaxies' meeting in Calgary, Canada, August 2018
- Science Organizing Committee member, third 'Radio Halos of Galaxies' meeting in Bonn, Germany, July 2015
- SOC member, second 'Radio Halos of Galaxies' conference in Kingston, July 2014
- Acting post-doc representative, union local psac901, Queen's U. (shared position), Dec 2013-April 2014
- SOC member for the first 'Radio halos of galaxies' conference in Leiden, July 2013
- Graduate student representative for University of Manitoba in the Graduate Student Organisation of the Canadian Astronomical Society, 2006-2010
- President, Physics and Astronomy Graduate Student Association, University of Manitoba, 2007 - 2008
- Graduate student representative, outreach committee of Physics and Astronomy department at University of Manitoba, 2006 - 2007
- Vice president of the Physics and Astronomy Graduate Student Association at the University of Manitoba, 2005 - 2006
- Member of the board of Göteborgs Astronomiska Klubb, GAK, 2003 -2005

Awards and grants

- Queen's MRI post-doctoral fellow award, 2012-2013
- MITACS-accelerate award 2009 (this award was not used, due to loss of industry partner commitment)
- Herzberg travel grant for observations at the JCMT 2007-2008

Software skills

Astronomy software: CASA, Miriad, GIPSY, IRAF, Karma, DS9, GalAPAGOS (rotation curve modelling), Gaia, SExtractor, Hyperz, BPZ, XS (some experience), proficient with the VLA OPT.

Applications: Matlab, Latex, APLpy, some python, PHP, MySQL, most common office and imaging software.

Platforms: Linux, Unix, OSX and Windows environments.

Extra-curricular activities

Cycling, jogging, swimming, music (flute, piano), gardening, camping, photography, ballroom dancing, hot-air ballooning.

References

Prof. Dr. Judith Irwin

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