

# Karen L. Masters

---

## CONTACT INFORMATION

514 Space Sciences Building  
Department of Astronomy  
Cornell University  
Ithaca, NY 14853 USA

*Voice:* +1 (607) 255-9852  
*Fax:* +1 (607) 255-8803  
*E-mail:* masters@astro.cornell.edu  
*Web:* www.astro.cornell.edu/~masters

## EDUCATION

**Cornell University**, Ithaca, NY, USA

Ph.D. Astronomy, (expected Summer 2005)

- Thesis Title: “Galaxy flows in and around the Local Supercluster”
- Minor in Physics
- Adviser: Martha P. Haynes

M.S. Astronomy, January 2003

**Oxford University**, Oxford, United Kingdom

B.A. Physics (1st Class Honours), June 2000

## RESEARCH INTERESTS

Structure and velocity field of the local universe, redshift independent distance indicators (especially Tully-Fisher), optical and radio observations, data mining, mock catalogues.

## RESEARCH EXPERIENCE

**Cornell University:** (Supervisors - Martha Haynes and Riccardo Giovanelli)

Construction of the SFI++ Sample of Tully-Fisher Distances **2004-**

Construction of Mock Catalogs for the SFI++ Sample **2004-**

Parametric modeling of the velocity field of the Local Supercluster **2003-**

HI Drift Surveys at Arecibo and the GBT (simulations of expected results, and observations) **2003-**

[OIII] rotation curves for intermediate redshift galaxies **2003-**

The Impact of Distance Uncertainties on Local Luminosity and Mass Functions **Summer 2003**  
(A study of the impact of ignoring peculiar velocities in deriving distances for catalogs)

Internal Extinction in Spiral Galaxies in the NIR from 2MASS data. **Summers 2001-2002**

**Birmingham University, UK:** (Supervisor - Duncan Forbes)

Predicting the Merger of the Local Group using Globular Cluster Populations **Summer 1999**

## OBSERVING EXPERIENCE

*Optical Spectroscopy:* 22 nights (including 5 as lead observer) with Double Spectrograph on Hale 5m, Palomar Observatory.

*Optical Imaging:* 6 nights WIYN 0.9m with MOSAIC, 1 night on WIYN 3.5m with Mini-Mo, KPNO.

*Radio:* Arecibo and GBT drift scan observations at L-band (21cm).

## HONORS AND AWARDS

- AAS Young Astronomer Travel Grant to attend IAU 2003, Sydney, Australia, July 2003
- Eleanor Norton York Prize in Astronomy for Graduate Students, Cornell Astronomy Dept. 2002.
- Cornell Graduate Student Conference Travel Grant, 2002, 2003.
- Cornell University Graduate Student Fellow 2000-2001.
- Scott Prize for best performance in B.A. Physics Examinations, Oxford University, 2000.
- Wadham College Scholar, Oxford University, 1998-2000
- Distinction in preliminary Physics Examinations, Oxford University, 1998.

## SUMMER SCHOOLS

- National Virtual Observatory Summer School, Aspen, Colorado, September 2004
- Eighth Synthesis Imaging Summer School at the VLA, Socorro, New Mexico, June 2002
- NAIC-NRAO Summer School on Single Dish Radio Astronomy, Arecibo, Puerto Rico, June 2001

TEACHING EXPERIENCE	<p><b>Cornell University</b>  <i>Teaching Assistant Astro 102</i> <span style="float: right;"><b>January-May 2003</b></span>          Introductory Planetary Astronomy for non-majors. Taught sections, assigned and graded homework.</p>
	<p><i>Teaching Assistant Writing in the Majors</i> <span style="float: right;"><b>August 2001-December 2002</b></span>          Writing in the Majors courses for non-majors (201/202), and Sophomores entering the Astronomy major (233). My duties included development of assignments, grading of papers and office hours.</p>
PUBLIC OUTREACH ACTIVITIES	<p><i>Curious About Astronomy? Ask an Astronomer</i> <span style="float: right;"><b>2000-present</b></span>          (<a href="http://curious.astro.cornell.edu">http://curious.astro.cornell.edu</a>). Question answering and website development and maintenance.</p>
	<p><i>Expanding Your Horizons in Science, Math and Engineering</i> <span style="float: right;"><b>Spring 2002-2005</b></span>          Annual conference for 7-9 grade girls. Developed and ran workshop on Galaxies 2002, 2003. Conference Co-Chair with overall responsibility for conference 2004, 2005.</p>
	<p><i>Graduate Student Schools Outreach Program</i> <span style="float: right;"><b>Spring 2005</b></span>          Developed and ran six session mini-course for Ms. Snow's 2nd Grade class at R.C. Buckley Elementary School, Lansing, NY.</p>
	<p><i>Focus for Teens Astronomy Program</i> <span style="float: right;"><b>Summer 2001-2004</b></span>          Developed and ran various workshops in Astronomy for this 4H affiliated program ran at Cornell.</p>
	<p><i>Public Stargazing Nights, Cornell Adult University</i> <span style="float: right;"><b>Summer 2002-2004</b></span>          Planned and ran public stargazing nights at the historic 12 inch refractor on the Cornell Campus.</p>
	<p><i>Graduate Student Chaperone CONTOUR Comet Challenge</i> <span style="float: right;"><b>Summer 2002</b></span>          Preliminary judging for this national competition, accompanied winners to launch of CONTOUR.</p>
PROFESSIONAL ORGANIZATIONS AND ACTIVITIES	<ul style="list-style-type: none"> <li>• Member American Astronomical Society 2001-present</li> <li>• Member Royal Astronomical Society 2001-present</li> <li>• Co-organizer Cornell Astronomy Department Galaxy Lunch Seminars since August 2004.</li> </ul>
REFEREED PUBLICATIONS	<p>The Impact of Distance Uncertainties on Local Luminosity and Mass Functions, K.L. Masters, M.P. Haynes and R. Giovanelli, 2004, ApJ 607, L115.</p> <p>Internal Extinction in Spiral Galaxies in the Near-Infrared, K.L. Masters, R. Giovanelli, and M.P. Haynes, 2003, AJ 126, 158</p> <p>The elliptical galaxy formerly known as the Local Group: merging the globular cluster systems, D.A. Forbes, K.L. Masters, D. Minniti, and P. Barmby, 2000, A&amp;A 358, 471</p>
CONFERENCE PRESENTATIONS	<ul style="list-style-type: none"> <li>• Simulations of the Effect of Peculiar Velocities on HI Mass Functions, K.L. Masters, M.P. Haynes, and R. Giovanelli, Oral presentation AAS Atlanta, 2004.</li> <li>• Blind Extragalactic HI Surveys with the Arecibo and Green Bank Telescopes: I. Simulations and Strategies for Survey Design., R. Giovanelli and 10 other authors including K.L. Masters, Poster AAS Atlanta 2004.</li> <li>• Blind Extragalactic HI Surveys with the Arecibo and Green Bank Telescopes: II. Strategies for Map Construction and Signal Detection., M.P. Haynes and 10 other authors including K.L. Masters, Poster AAS Atlanta 2004.</li> <li>• The Structure and Velocity Field of the Local Supercluster, K.L. Masters &amp; M.P. Haynes, Poster presentation, IAU Symposium 216, Sydney, Australia 2003.</li> <li>• Internal Extinction in Spiral Galaxies in the Near-Infrared, K.L. Masters, R. Giovanelli, and M.P. Haynes, Poster presentation UK National Astronomy Meeting, Dublin 2003.</li> <li>• "Curious About Astronomy?": Cornell's Ask an Astronomer Website., The "Curious" Team including K.L. Masters. Presented at various conferences including AAS Seattle 2003, LPI 2003, NRAO Communicating Astronomy to the Public Conference, 2003.</li> </ul>