

CITA Canadian Institute for
Theoretical Astrophysics



INCORPORATED 1986

Institut canadien
d'astrophysique théorique **ICAT**

ANNUAL GENERAL MEETING

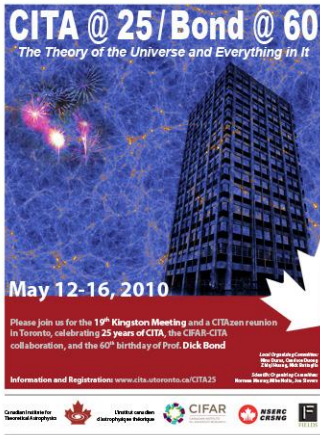
2010

Halifax

26 May 2010

AGENDA

- 1. 25 Years of CITA Science**
- 2. Highlights of 2009-2010**
- 3. CITA Current Snapshot**
- 4. National Programs**
 - a. National Fellows
 - b. Senior Visiting Fellows / Sabbatical Visitors
 - c. Predoctoral Program
 - d. Graduate Students
 - e. Summer Undergraduates
 - f. Computational Undergraduate Students
- 5. CITA Activity**
 - a. CITA Exchange Programs
 - b. Sackler Lecture
 - c. Meetings Supported in 2009-2010
 - d. Awards
 - e. Scientific Contributions
 - f. CITA web site
 - g. CITA web casting
 - h. Support for visits by CITA fellows
 - i. Colloquia and Seminars
 - j. Weekly Astro-ph Meetings
- 6. New Membership Applications
Renewal of Membership**



CITA 25 Years

May 12-16, 2010
19th Kingston Meeting
CITAZen Reunion!

We would like to thank Peter Martin and Dick Henriksen for taking an idea and seeing it through to fruition – establishing both CITA, Inc and CITA within the University of Toronto

We would also like to thank all the theorists in CASCA who supported the establishment of CITA and who continue to support CITA in its endeavours to maintain it's national and international profile as a pre-eminent theoretical astrophysics institute.

Highlights 2009-2010

FACULTY

- **Dick Bond**
- **Peter Martin**, Chair, DAA
- **Norman Murray**, Director
- **Ue-li Pen**, Acting Associate
- **Harald Pfeiffer**, CRC Tier II
- **Chris Thompson**

FACULTY AWARDS

- **Bond**: Tory Medal

PDF RECRUITING

- **8** PDFs and **3** CITA National Fellows recruited in 2009/2010
- **3** PDFs/SRAs and **4** CITA National Fellows recruited for 2010/2011

STAFF

- **Nina Duras** returned from maternity leave in January 2010
- **Margaret Fukunaga** continues to help out
- **Candace Duong**

COMPUTING

- **Don Banh** Computer Manager
- **John Dubinski** hired January 2010 parallel programmer
- **Harald Pfeiffer CFI GPU cluster**

Lev Kofman

June 17th 1957- November 12, 2009



CITA Current Snapshot

NEW RESEARCH FELLOWS (Sept 2010)

219 applications for positions

- **Kipp Cannon** (PhD Alberta 2003) Cosmology, gravitational waves, LIGO
- **James Shaw** (PhD Cambridge 2010) Early Universe, magnetic fields, CMB
- **Shane Davis** (PhD California, Santa Barbara 2006) High energy astrophysics, accretion theory, black holes, x-ray binaries

CURRENT FELLOWS:

- Marcelo Alvarez (2009)
- Neil Barnaby (2007)
- Kevin Blagrove (2006)
- Avery Broderick (2007)
- Matthew Browning (2008)
- Phil Chang (2009)
- Tzu-Ching Chang (2006)
- Jens Chluba (2008)
- Mathieu Compiègne (2007)
- Neal Dalal (2005)
- Adrienne Erickcek (2009)
- Amir Hajian (2010)
- Robyne Levin (2008)
- Patrick McDonald (2004)
- Brice Menard (2006)
- Abdul Mroue (2009)
- Mike Nolta (2004)
- Carlos Palenzuela (2009)
- Christoph Pfrommer (2005)
- Hilke Schlitching (2009)
- Jonathan Sievers (2003)
- Rajat Thomas (2010)
- Geoffrey Vasil (2009)
- Andrew Youdin (2006)

CITA Current Snapshot...

TO PERMANENT POSITIONS:

- **BOYLE, Latham**, Faculty position, Perimeter Institute
- **IVANOVA, Natasha**, CRC Tier II, University of Alberta
- **LITHWICK, Yoram**, Faculty position, Northwestern University
- **CHANG, Tzu-Ching**, Faculty position, ASIAA
- **DORÉ, Olivier**, Senior Scientist, JPL
- **CHELOUCHE, Doron**, Faculty position, Haifa
- **MACDONALD, Pat**, faculty position, LBL/Berkeley
- **MENARD, Brice**, faculty position, Johns Hopkins
- **PFROMMER, Christoph**, 5 year position, HITS, Heidelberg

TO OTHER POSITIONS:

- **DURSI, Jonathan**, Programmer, SciNet (20% CITA)
- **NISSANKE, Samaya**, PDF, Caltech
- **BRAITHWAITE, Jonathan**, PDF, Bonn University
- **BARNABY, Neil**, PDF, Minnesota
- **COMPIEGNE, Mathieu**
- **Schlichting, Hilke**, Hubble Fellowship, UCLA
- **Andrew Youdin**, PDF, CfA/Harvard

63% of former CITA research associates are in permanent academic or research positions (99)

25% are in PDF positions poised for faculty positions (includes current PDFs at CITA) This number has increased this year to due to the difficult economic times resulting in fewer faculty positions

12% have left the field – most are in industry

CITA Current Snapshot...

	CITA FACULTY	
<i>Stanford University</i>	BOND, Dick (CMB , LSS, early universe)	
	PFEIFFER , Harald	<i>CRC Tier II</i>
<i>University of Toronto</i>	MARTIN , Peter (ISM)	<i>Chair, DAA</i>
<i>Caltech</i>	MURRAY, Norm (solar system, AGN)	<i>Director, CRC Tier I</i>
<i>Harvard University</i>	PEN, Ue-li (LSS, hydro)	<i>Acting Associate Director</i>
<i>University of North Carolina</i>	THOMPSON, Chris (high energy)	
	PDFs/SRAs	
<i>University of Texas at Austin</i>	ALVAREZ, Marcelo	
<i>McGill University</i>	BARNABY, Neil	<i>Minnesota</i>
<i>University of Toronto</i>	BLAGRAVE, Kevin (P. Martin)	
<i>Princeton University</i>	BOYLE, Latham	<i>Perimeter Institute</i>
<i>Max Planck Institute</i>	BRAITHWAITE, Jon (1/2 Thompson)	<i>Bonn University</i>
<i>CfA, Harvard</i>	BRODERICK, Avery (SRA)	
<i>University of Chicago</i>	BROWNING, Matthew	
<i>University of California, Berkeley</i>	CHANG, Phil	
<i>UC Berkeley</i>	CHANG, Tzu Ching	<i>Faculty IAA</i>
<i>IAS (Princeton)</i>	CHELOUCHE, Doron (N. Murray)	<i>Faculty, University of Haifa</i>
<i>MPA-Garching</i>	CHULBA, Jens	
<i>IAS-Paris</i>	COMPIEGNE, Mathieu	
<i>IAS (Princeton)</i>	DALAL, Neal (SRA)	
<i>Princeton University</i>	DORÉ, Olivier (SRA)	<i>JPL, Caltech</i>
<i>University of Chicago</i>	DURSI, Jonathan (SRA)	<i>SciNet, University of Toronto</i>
<i>California Institute of Technology</i>	ERICKCEK, Adrienne	
<i>IUCAA</i>	HAJIAN, Amir	
<i>Northwestern University</i>	IVANOVA, Natasha	<i>University of Alberta</i>
<i>University of Colorado</i>	LEVINE, Robyn	
<i>UC Berkeley</i>	LITHWICK, Yoram (SRA)	<i>Northwestern University</i>
<i>Princeton University</i>	McDONALD, Pat (SRA)	<i>LBL/Berkeley</i>
<i>IAS (Princeton)</i>	MENARD, Brice (SRA)	<i>Faculty, Johns Hopkins</i>
<i>Cornell</i>	MROUE, Abdul	
<i>IAP, Paris</i>	NISSANKE, Samaya	<i>JPL, Caltech</i>
<i>Princeton University</i>	NOLTA, Mike (SRA)	<i>Bond (CSA project)</i>
<i>Albert Einstein Institute</i>	PALENZUELA, Carlos	
<i>Max Planck Institute</i>	PFROMMER, Christoph (SRA)	<i>SRA, Heidelberg</i>
<i>California Institute of Technology</i>	SCHLITCHING, Hilke	<i>Hubble Fellow, UCLA</i>
<i>Caltech</i>	SIEVERS, Jonathan (SRA)	<i>Bond</i>
<i>University of Groningen, Netherlands</i>	THOMAS, Rajat	
<i>JILA</i>	VASIL, Geoffrey	
<i>Princeton University</i>	YUUDIN, Andrew	<i>PDF, CfA/Harvard</i>

CITA Current Snapshot...

CITA Alumni in Permanent or Tenure-Stream Positions

- P. Armitage, Associate Professor, Dept. of Astrophysical & Planetary Science, University of Colorado
- P. Arras, Assistant Professor, Dept. of Astronomy, University of Virginia
- K. Ashman, Associate Professor, Dept. of Physics, University of Missouri
- A. Babul, Professor, Dept. of Physics and Astronomy, University of Victoria
- D. Ballentyne, Assistant Professor, Dept. of Physics, Georgia Tech
- R. Barkana, Senior Lecturer, Tel Aviv University
- J. Barnes, Professor, Institute for Astronomy, University of Hawaii, USA
- P. Barnes, Staff Scientist, NRAO, Socorro, New Mexico, USA
- S. Basu, Professor, Dept. of Physics & Astronomy, University of Western Ontario
- A. Beloborodov, Associate Professor, Dept. of Astronomy, Columbia University
- F. Bernardeau, ingénieur CEA, Service de Physique Théorique, Saclay, France
- L. Binette, Associate Professor, UNAM, Instituto de Astronomia, Mexico City, Mexico
- O. Blaes, Professor, Dept. of Physics, University of California, Santa Barbara
- L. Boyle, Junior Faculty, Perimeter Institute
- P. Brown, Lecturer, Dept. of Biological Sciences, University of Manchester, UK
- B. Chaboyer, Professor, Dept. of Physics & Astronomy, Dartmouth College
- J. Cho, Assistant Professor, Chungnam National University
- S. U. Choe, Professor, Seoul National University, Korea
- M. Choptuik, Professor, Dept. of Physics, University of British Columbia
- S. Colombi, chargé de recherche, l'Institut d'Astrophysique, Paris, France
- C. Contaldi, Lecturer, Imperial College
- H. Couchman, Professor, Dept. of Physics & Astronomy, McMaster University
- R. Crittenden, Reader, Institute of Cosmology and Gravitation, University of Portsmouth
- L. Dones, Senior Research Scientist, Southwest Research Institute
- O. Dore, Senior Research Scientist, JPL/Caltech
- J. Feige, Assistant Professor, University of Manitoba
- G. Felder, Professor, Dept. of Physics, Smith College
- H. Feldman, Professor, Dept. of Physics & Astronomy, University of Kansas
- A. Frolov, Assistant Professor, Dept. of Physics, Simon Fraser University
- B. Gladman, Professor, Dept. of Physics & Astronomy, UBC
- B. Hansen, Associate Professor, UCLA
- H. Hoekstra, Assistant Professor, Leiden University
- G. Holder, Assistant Professor, McGill University
- M. Holman, Astrophysicist, Planetary Sciences Division, Smithsonian Astrophysical Observatory
- N. Ivanova, Assistant Professor, University of Alberta
- A. Jaffe, Lecturer, Imperial College
- D. Johnstone, Assoc. Research Officer, Herzberg Institute of Astrophysics
- A. Lewis, Lecturer, University of Sussex
- A. Klypin, Professor, Dept. of Astronomy, New Mexico State University
- L. Kofman, Professor, University of Hawaii to CITA
- L. Knox, Professor, Dept. of Physics, UC Davis
- K. Kuijken, Professor, Leiden University
- J. Lattanzio, Reader and Deputy Head, Dept. of Mathematics, Monash University, Australia
- B. Latter, Staff Scientist, IPAC, California Institute of Technology, USA
- A. Lazarian, Associate Professor, Dept. of Astronomy, University of Wisconsin at Madison
- H.-M. Lee, Professor, Pusan National University, Korea
- J. Levin, Professor, Barnard College, Columbia
- Y. Levin, Assistant Professor, University of Leiden
- M. Liebendorfer, Assistant Professor, University of Basel
- P. Lilje, Professor, Institute of Theoretical Astrophysics, University of Oslo, Norway
- Y. Lithwick, Assistant Professor, Northwestern University

- M. Lyutikov, Assistant Professor, Purdue University
- S. Majumdar, Assistant Professor, Tata Institute of Fundamental Research, Bombay, India
- R. Malaney, Senior Lecturer, School of Electrical Engineering and Telecommunications, University of New South Wales
- C. Matzner, Associate Professor, Dept. of Astronomy, University of Toronto
- M. Medvedev, Associate Professor, University of Kansas
- A. Meiksin, Reader, Dept. of Physics, University of Edinburgh, UK
- M. Merrifield, Professor, Dept. of Astronomy, University of Nottingham, UKD. Merritt, Professor, Dept. of Physics, Rochester Institute of Technology
- M. Miville-Deschenes, charge de recherche Iere classe au CNRS, Institut d'Astrophysique Spatiale
- I. Murakami, Staff Scientist, National Institute for Fusion Science, Nagoya, Japan
- J. Murray, Staff scientist, Centre for Astrophysics and Supercomputing, Swinburne University
- S. Myers, Staff Scientist, NRAO
- P. Natarajan, Associate Professor, Dept. of Astronomy, Yale University
- L. Nelson, Professor, Dept. of Physics, Bishop's University
- A. Noriega-Crespo, Staff Scientist, SIRTf Science Center, Caltech
- M. Peloso, Associate Professor, University of Minnesota
- C. Pichon, Chargé de recherche, l'Observatoire de Strasbourg
- D. Pogosyan, Associate Professor, Dept. of Physics, University of Alberta
- S. Prunet, Staff Scientist, Institut d'Astrophysique de Paris
- T. R. Quinn, Research Assistant Professor, University of Washington, USA
- A. Raga, Professor, UNAM, Instituto de Astronomia, Mexico City, Mexico
- D. Richardson, Professor, Dept. of Astronomy, University of Maryland
- B. Ryden, Professor, Dept. of Astronomy, Ohio State University
- P. Saha, Scientist, ETH, Zurich
- V. Sahni, faculty, Inter-University Centre for Astronomy and Astrophysics, Pune, India
- R. Scoccamarro, Associate Professor, New York University
- N. Shaviv, Professor, Hebrew University
- T. Souradeep, faculty, Inter-University Centre for Astronomy and Astrophysics, Pune, India
- S. Sridhar, faculty, Inter-University Centre for Astronomy and Astrophysics, Pune, India
- G. Starkman, Professor, Dept. of Physics, Case Western Reserve University
- A. Stebbins, Staff Scientist, NASA/Fermilab Astrophysics Center, USA
- J. F. Sygnet, chargé de recherche, Institut d'Astrophysique, Paris, France
- I. Szapudi, Associate Professor, University of Hawaii
- S. Terebey, Professor, California State University in Los Angeles
- P. Thomas, Professor, Astronomy Centre, University of Sussex, UK
- C. Thompson, Professor, Dept. of Physics & Astronomy, University of North Carolina to CITA
- J. Touma, faculty, American University of Beirut
- D. van Buren, Project Manager, Jet Propulsion Laboratory, Caltech
- R. van de Weygaert, Lecturer, Kapteyn Astronomical Institut, University of Groningen
- L. van Waerbeke, Assistant Professor, University of British Columbia
- J. Wadsley, Associate Professor, McMaster
- J. Wang, Assistant Professor, University of Maryland (d)
- R. Webster, Professor, School of Physics, University of Melbourne, Australia
- M. West, Professor, Dept. of Physics & Astronomy, University of Hawaii at Hilo
- L. Widrow, Professor, Dept. of Physics, Queen's University
- G. Wilson, Scientist, SIRTf, Caltech
- Y. Wu, Associate Professor, Dept. of Astronomy, University of Toronto
- J. Weingartner, Assistant Professor, Dept. of Physics & Astronomy, George Mason University
- G. Yepes, Professor Titular, Departamento de Fisica Teorica C-XI, Universidad Autonoma Madrid, Spain

CITA Current Snapshot...

CITA ALUMNI in FACULTY POSITIONS WITHIN CANADA

- **A. Babul**, Professor, Dept. of Physics and Astronomy, University of Victoria
- **S. Basu**, Associate Professor, Dept. of Physics & Astronomy, University of Western Ontario
- **L. Boyle**, Junior Faculty, Perimeter Institute
- **M. Choptuik**, Professor, Dept. of Physics, University of British Columbia
- **H. Couchman**, Professor, Dept. of Physics & Astronomy, McMaster University
- **J. Fiege**, Assistant Professor, University of Manitoba
- **A. Frolov**, Assistant Professor, Simon Fraser University
- **B. Gladman**, Professor, Dept. of Physics & Astronomy, UBC
- **H. Hoekstra**, Assistant Professor, Dept. of Physics & Astronomy, University of Victoria moved to Leiden University in August 2008
- **G. Holder**, Assistant Professor, Dept. of Physics, McGill University
- **N. Ivanova**, Assistant Professor, University of Alberta
- **D. Johnstone**, Senior Research Officer, NRC, HIA
- **L. Kofman**, Professor, CITA
- **C. Matzner**, Associate Professor, Dept. of Astronomy, University of Toronto
- **L. Nelson**, Professor, Dept. of Physics, Bishop's University
- **D. Pogosyan**, Associate Professor, Dept. of Physics, University of Alberta
- **C. Thompson**, Professor, CITA
- **L. van Waerbeke**, Assistant Professor, Dept. of Physics & Astronomy, UBC
- **L. Widrow**, Professor, Dept. of Physics, Queen's University
- **Y. Wu**, Associate Professor, Dept. of Astronomy, University of Toronto

A number of CITA National Fellows have also gone on to faculty positions in Canada:

- **M. Hudson**, Professor, University of Waterloo;
- **R. Thacker**, Associate Professor and Canada Research Chair, St. Mary's
- **R. Ouyed**, Associate Professor, University of Calgary;
- **J. Wadsley**, Assistant Professor, McMaster University

Some CITA Graduate students as well; e.g. **M. Mandy**, Associate Professor, University of Northern British Columbia

CITA Current Snapshot...

CITA COUNCIL MEMBERS 2009-2010

Norm Murray **Director**

Robert Baker **Vice-Dean, FAS, UofT**

****Shantanu Basu** **University of Western Ontario (2010)**

Arif Babul **University of Victoria (2011)**

***Rob Thacker** **St. Mary's University, CAS rep (2011)**

Ralph Pudritz **Chair, McMaster University (2012)**

Larry Widrow **Queen's (2013)**

***CAS rep - 2 year term 2009-2011**

****Term Expires – one new member for 2010-2011**

3. National Programs

A. CITA NATIONAL FELLOWS

National Fellows are nominated by the host university and selected by CITA Council using the same quality criteria as for the CITA research fellows, along with strategic national considerations. Since the start of the program in 1988, we have named **55** National Fellows.

CITA provides 50% of the stipend up to 55K/2 years, plus up to 6K research expenses. The remainder is provided by the host university. National Fellows are encouraged to visit CITA for extended periods of time.

CITA put ads in the AAS Job Register, highlighting the National Fellow Program and web links.

CITA also advertised National Fellow positions from CITA's Web site, coupling NF visibility to CITA RA opportunities.

CITA helps in recruitment.

INCOMING:

National Fellows for 2010-2011:

- **Hendrik Hildebrandt**, University of British Columbia (NF in name only). Nominated by Ludovic Van Waerbeke.
- **Evgeny Sorkin**, University of British Columbia. Nominated by Matt Choptuik.
- **Jesus Zavala**, University of Waterloo. Nominated by Michael Balogh.
- **Nathan Kaib**, Queen's University. Nominated by Martin Duncan

CURRENT:

National Fellows for 2009-2010:

- **DUTTON, Aaron** University of Victoria (2009-2011). Nominated by J. Navarro.
- **TASKER, Elizabeth**, McMaster (2009-2011). Nominated by J. Wadsley & R. Pudritz.
- **Van der SLYUS, Marc**, University of Alberta (2009-2011). Nominated by N. Ivanova.

National Fellows for 2008-2009:

- **DOTTER, Aaron** University of Victoria (2008-2010). Nominated by Don A. VandenBerg.
- **POPE, Edward** University of Victoria (2008-2010). Nominated by Arif Babul.

National Programs...

B. SENIOR VISITING FELLOWS

CITA supports salaries of faculty members from other Canadian universities to make extended visits to CITA Recent awards:

2010-11	James Wadsley (McMaster University)
2010-11	Denis Leahy (University of Calgary)
2008-09	Dimitri Pogosyan (University of Alberta)
2008-09	Eric Poisson (University of Guelph)
2008-09	Rachid Ouyed (University of Calgary)
2007-08	Ralph Pudritz (McMaster University)
2005-06	Rachid Ouyed (University of Calgary)
	Norbert Bartel (York University)
2004-05	Lorne Nelson (Bishop's University)
2003-04	Hugh Couchman (McMaster University)
2002-03	Mike Hudson (University of Waterloo)
	Arif Babul (University of Victoria)
2000-01	Norbert Bartel (York University)
1999-00	Werner Israel (University of Victoria)
	Sun Kwok (University of Calgary)
	Marshall McCall (York University)
	Douglas Scott (UBC)
	Larry Widrow (Queen's University)
1998-99	Kim Innanen (York University)
	Lorne Nelson (Bishop's University)
1995-97	Hugh Couchman (Western Ontario)
	Dick Henriksen (Queen's University)
	Michael West (Saint Mary's University)
	Larry Widrow (Queen's University)
	Ralph Pudritz (McMaster University)
	Paul Wesson (Waterloo)

We are interested in new Senior Visiting Fellows:

Typically the fellowships provide funding to release the fellow from teaching and administrative duties for one academic term, or for sabbatical top-up. The Fellow is expected to spend a minimum of 50% of the supported time in residence at CITA. The CITA Senior Visiting Fellows Program began with start-up funds from the UofT Astronomy Department and has thrice received injections of funding from the UofT School of Graduate Studies and Faculty of Arts & Science

National Programs...

RECENT SABBATICAL VISITORS:

- Professor **Peter Goldreich**, Caltech, 1 month x 2
- Professor **Bernard Carr**, Queen Mary University, London, 2 months x 2
- Professor **Changboom Park**, University of Korea
- Professor **James Wadsley**, McMaster University 1 year
- Professor **Rachid Ouyed**, University of Calgary, 4 months
- Professor **Denis Leahy**, University of Calgary

PREVIOUS SABBATICAL VISITORS:

- Professor **Eric Poisson**, University of Waterloo, 1 year
- Professor **Dimitri Pogosyan**, University of Alberta, 4 months
- Professor **Gary Felder**, Smith College, visited for 5 months
- Professor **Francis Bernardeau** Centre D'\etudes De Saclay, Service de Physique Theorique, France, visited for 6 months
- Professor **Ralph Pudritz**, McMaster, visited for 4 months
- Professor **Richard Ellis**, Caltech visited for 2 months
- Dr. **Steve Myers**, NRAO visited for 3 months
- Professor **Andreas Reisenegger**, Universidad Catholica in Santiago Chile
- Professor **Joao Magueijo**, Imperial visited for a year (mostly Perimeter Institute)
- Professor **Sergei Shandarin**, University of Kansas visited for 6 months
- Professor **Rien van de Weygaert**, University of Groningen visited for one month
- Professor **Peter Coles**, University of Nottingham visited for 3 months
- Professor **Norbert Bartel**, York University visited for 4 months
- Professor **Rachid Ouyed**, Univ. of Calgary visited for 4 months
- Professor **Dong Lai**, Cornell visited for a term
- Professor **Lorne Nelson**, Bishop's University visited for a term
- Professor **Ewan Stewart**, KAIST Korea visited for 6 months
- Professor **Arif Babul**, University of Victoria visited for 4 months.
- Professor **Mike Hudson**, University of Waterloo visited for 4 months.
- Professor **Margot Mandy**, University of Northern British Columbia visited for 2 months.
- Professor **Omer Blaes**, UC Santa Barbara visited for 3 months.
- Professor **Tongjie Zhang** from Beijing Normal University visited for one year.

National Programs...

CITA LONG TERM VISITORS: 16 from May 2009- April 2010

<i>Caltech</i>	Arnold Boothroyd	<i>CITA Visitor</i>
<i>University of Waterloo</i>	Mike Fich	<i>CITA Visitor</i>
<i>University of Waterloo</i>	James Taylor **	<i>CITA Visitor</i>
<i>McMaster University</i>	Ethan Vishniac	<i>CITA Visitor</i>
<i>National Center for Radio Astrophysics</i>	Rajaram Nityananda	<i>CITA Visitor</i>
<i>Beijing Normal University</i>	Hao-Ran Yu	<i>CITA Visitor</i>
<i>Perimeter Institute</i>	Federico Piazza	<i>CITA Visitor</i>
<i>Louisiana State University</i>	Geoff Clayton	<i>CITA Visitor</i>
<i>TIFR</i>	Subha Majumdar	<i>CITA Visitor</i>
<i>KIAS, Korea</i>	Graziano Rossi	<i>CITA Visitor</i>
<i>University of Calgary</i>	Rachid Ouyed	<i>Sabbatical Visitor</i>
<i>Caltech</i>	Peter Goldreich	<i>Sabbatical Visitor</i>
<i>Queen Mary University London</i>	Bernard Carr	<i>Sabbatical Visitor</i>
<i>McMaster University</i>	James Wadsley	<i>Sabbatical Visitor</i>
<i>University of Calgary</i>	Denis Leahy	<i>Sabbatical Visitor</i>
<i>KIAS, Korea</i>	Changbom Park	<i>Sabbatical Visitor</i>

**Other Long-Term Visitors include James Wadsley's grad students: Sijing Shen, Matthew Low, Patrick Rogers, Rachel Ward, Rory Woods

CITA SHORT TERM VISITOR PROGRAM: 146 from May 2009- April 2010

CITA has a vigorous visitors program that brings a number of Astronomy and Physics faculty members from other Canadian Universities and from abroad for both extended stays and shorter visits.

National Programs...

C. PREDOCTORAL PROGRAM:

Bringing students in their PhD programs to CITA for periods of a few months to a year has proven to be a great success. All candidates have come with their own funding. Participants in the program so far are:

- **Mark Bennett**, University of Melbourne, May – July 2010
- **Anders Pinzke**, Stockholm University May 2010
- **Fabio Zandanel**, Instituto de Astrofisica de Andalucia, May – June 2010
- **Yuri Cavecchi** – Leiden, June-July 2009
- **Francisco Villaescusa** – Universitat de Valencia, Sept to Dec 2009
- **Andreu Font-Ribera** – Spain, February to April 2009
- **Daniel Figuero** – Spain, August to December 2007
- **Marie Martig** - Ecole Centrale de Paris, 2006
- **Jean Coupon** – Observatoire de Paris, 2006
- **Jan Kratochvil** – Stanford, 2005-2006
- **Amir Hajian** – IUCAA, India, 2005
- **Doug Hanley** – Caltech, 2004
- **Wan-Il Park** – KAIST, Korea, 2004
- **Parker Troischt** – University of North Carolina, 2004
- **Francois Fressin** – Institut d'Astrophysique Spatiale, Paris, 2003
- **Stelios Kazantzidis** – Institute for Theoretical Physics, Zurich, 2003
- **Jie Wang** – Beijing Observatory. 2003
- **Shingkwong Wong** – National Taiwan University, 2003
- **Sebastien Ray** – École Normale Supérieure, 2002
- **Yacine Dolivet** – École Normale Supérieure, 2001
- **Kenji Kadota** – University of California, Berkeley, 2001
- **Tom Montroy** – University of California, Santa Barbara, 2001-2001
- **Aristotle Socrates** – University of California, Santa Barbara, 2001
- **Amanda Karakas** – Monash University, 2000
- **Juhan Kim** – Seoul National University, 2000-2001
- **Johannes Martin** – University of Jena, Germany, 2000
- **Sebastian Pichler** – Ludwig, Maximilians Universitaet, Germany, 2000-2001
- **Gary Felder** – Stanford, 1999-2000 (now a CITA PDF)
- **Céline Anthoine** – École Normale Supérieure, 1999
- **Colin Borys** – University of British Columbia, 1999

National Programs...

D. GRADUATE STUDENTS 2009-2010: 21

- **SLOAN, Peter** (Physics). Supervised by L. Kofman
- **CROLL, Bryce** (Astronomy). Supervised by N. Murray
- **BRADEN, Jonathan** (Physics). Supervised by L. Kofman
- **HARPER-CLARK, Elizabeth** (Astronomy). Supervised by N. Murray
- **HARNOIS-DERAPS, Joachim** (Physics). Supervised by U.-L. Pen
- **BATTAGLIA, Nicholas** (Astronomy). Supervised by R. Bond
- **FERNANDEZ, Rodrigo** (Astronomy->IAS). Supervised by C. Thompson
- **GONCLAVES, Daniela** (Astronomy). Supervised by P.G. Martin
- **HUANG, Zhiqi** (Astronomy). Supervised by R. Bond and L. Kofman
- **LU, Ting Ting** (Astronomy). Supervised by U.-L. Pen
- **PANG, Bijia** (Astronomy). Supervised by U.-L. Pen
- **PRODAN, Snezana** (Physics). Supervised by N. Murray
- **FARHANG, Marzieh** (Astronomy). Supervised by R. Bond and B. Netterfield
- **ROY, Arabindo** (Astronomy). Supervised by P. Martin
- **RIVERA-INGRAHAM, Alana** (Astronomy). Supervised by P. Martin
- **VUJANOVIC, Gojko** (Astronomy->McGill). Supervised by R. Bond and U. Pen
- **PACIGA, Gregory** (Astronomy). Supervised by U. Pen
- **MACDONALD, Ilana** (Astronomy). Supervised by H. Pfeiffer
- **MASUI, Kiyoshi** (Physics). Supervised by U. Pen
- **NGAN, Wayne** (Astronomy). Supervised by U. Pen
- **TACIK, Nick** (Astronomy). Supervised by H. Pfeiffer

E. SUMMER UNDERGRADUATES 2010:

This summer there are 7 summer students working with faculty in collaboration with many of the postdoctoral fellows. 3 have won NSERC Summer undergraduate awards.

NSERC:

- *Ting Chen Leo Hsu (Pfeiffer)*
- *Adam Lewis (Murray)*
- *Junjiajia Long (Bond)*

NON NSERC:

- *Nikta Javanfar (Schlichting)*
- *Eve Lee (Murray)*
- *Andrew Mergl (Cannon)*
- *Arash Zamanpour (Pen)*

National Programs...

F. COMPUTATIONAL UNDERGRADUATE STUDENTS:

Bo Liu, PEY undergraduate Student

David Song, Assistant to the System Manager, Co-op student

Dusan Andric, PEY undergraduate student

Andre Resnick, Assistant to the Systems Manager, co-op student

Davinder Singh, Assistant to the Systems Manager, co-op student

Owaiz Haji, Assistant to the Systems Manager, co-op student

Anthony Paulozza, Assistant to the Systems Manager, co-op student

Alex Hughson, Assistant to the Systems Manager, co-op student

Radu Nitu, Assistant to the Systems Manager, co-op student

Radu Nitu, Assistant to the Systems Manager, co-op student

Jacob de Bruyn, Assistant to the Systems Manager, co-op student

Alex Zenkov, Assistant to the Systems Manager, co-op student

Paul Millerd, Assistant to the Systems Manager, co-op student

Alex Zenkov, Assistant to the Systems Manager, co-op student

Jason Chong, Assistant to the Systems Manager, co-op student

Peter Wagner, Assistant to the Systems Manager, co-op student

Jason Chong, Assistant to the Systems Manager, co-op student

Peter Wagner, Assistant to the Systems Manager, co-op student

Philip Petracca, Assistant to the Systems Manager, co-op student

Mubdi Rahman, Summer student web assistant, windows

Steven Di Rocco, Assistant to the Systems Manager, co-op student

Steven D'Cruz, Assistant to the Systems Manager, co-op student

Steven Di Rocco, Assistant to the Systems Manager, co-op student

David Wu, Assistant to the Systems Manager, co-op student

Don Banh, Assistant to the Systems Manager

Filip Lazar, Assistant to the Systems Manager, co-op student

Nishant Faria, Assistant to the Systems Manager

Don Banh, Assistant to the Systems Manager, continued 2001-02 academic year on a reduced basis

4. CITA ACTIVITY

A. SACKLER VISITING ASTROPHYSICIST

Each year CITA invites an internationally distinguished scholar conducting research in theoretical astrophysics to give two lectures (one public) at the University of Toronto, and to interact with the CITA faculty, research fellows and graduate students, as well as researchers and students in the Departments of Astronomy and Physics. This is funded by an endowment, the Raymond and Beverly Sackler Visiting Astrophysicist Program. The visit is intended to be the highlight of the academic year at CITA.

- **Sir Martin Rees (Lord Martin), Cambridge, 1997-98**
- **Peter Goldreich, Caltech, 1998-99**
- **Frank Shu, Berkeley, 1999-00**
- **Jim Peebles, Princeton, 2000-01**
- **John Bahcall, Princeton, 2001-02**
- **Andrei Linde, Stanford, 2002-03**
- **George Efstathiou, Cambridge, 2003-04**
- **Chris McKee, UC Berkeley, 2004-05**
- **Rashid Sunyaev, Max-Planck, 2005-2006**
- **Scott Tremaine, IAS Princeton, 2006-2007**
- **Kip Thorne, Caltech, 2007-2008**
- **Roger Blandford, Stanford, 2008-2009**
- **Jerry Ostriker, Princeton University, 2009-2010**

NEXT: ??? Suggestions!!!

CITA ACTIVITY...

B. SUPPORT FOR SCIENTIFIC MEETINGS IN 2009-2010

As part of CITA's national mandate, the aim of this program is to promote interaction, collaboration and exchange of scientific results within the Canadian and international astrophysics communities.

Conferences supported for 2009-10

- **Magnetic Fields: From Core Collapse to Young Stellar Objects, May 17-18, 2010, London, Ontario**
- **Black Holes VII Workshop, May 9-15, 2009, Banff, Alberta**
- **13th Canadian Conference on General Relativistic Astrophysics, May 16-18, SAIT Polytechnic, Calgary, Alberta**
- **Theory Canada 5, June 3-6 2009, University of New Brunswick**
- **Workshop "Unveiling the Mass: Extracting and Interpreting Galaxy Masses, June 15-19, 2009, Queen's**
- **18th Kingston Meeting, October 16-18, 2009, St. Mary's**
- **Workshop on stellar magnetism, October 2009, CITA**
- **19th Kingston Meeting, May 12-16, 2010, CITA**

CITA ACTIVITY...

C. AWARDS:

THE BEATRICE D. TREMAINE FELLOWSHIP

This is an endowed award to be given annually on the basis of outstanding research to a current CITA research fellow.

- 2009: Neal Dalal**
- 2008: Patrick McDonald**
- 2007: Natasha Ivanova**
- 2006: Michael Nolte**
- 2005: Jonathan Sievers**
- 2004: Carlo Contaldi**
- 2003: Yuri Levin**
- 2002: Andrei Beloborodov**
- 2001: Henk Hoekstra**
- 2000: Nir Shaviv**
- 1999: Dmitri Pogosyan**

THE JEFFREY L. BISHOP FELLOWSHIP

Jeffrey Bishop was one of the first group of postdocs at CITA. He died tragically in an accident shortly after leaving CITA. In his memory his mother gives a donation biennially.

- 2009: Matt Browning**
- 2007: Yoram Lithwick**
- 2005: Jonathan Dursi**
- 2003: Matthias Liebendorfer**
- 2001: Yanqin Wu**
- 1999: Phil Arras**
- 1997: John Dubinski**
- 1995: Kevin Rauch**
- 1993: Janna Levin**
- 1991: Gerry Quinlan**
- 1990: Konrad Kuijken**

CITA ACTIVITY...

D. SCIENTIFIC CONTRIBUTIONS:

Researchers at CITA published nearly 180 in 2009

E. CITA WEBSITE:

www.cita.utoronto.ca lists all upcoming events, CITA's latest news, information on current research initiatives, jobs, and visitor information. The website also provides archives on all talks, seminars, meetings, workshops and special lectures.

F. CITA WEB CASTING

CITA is providing web casts of all our seminars, lectures and talks. Archives of web casts; audio, video, and slides are recorded and are accessible at the CITA seminar page:

www.cita.utoronto.ca/index.php.eac

G. SUPPORT FOR VISITS BY CITA FELLOWS

The aim of this program is to promote professional interactions within the Canadian theoretical astrophysics community, by helping to defray the travel costs of CITA staff who are invited to visit Canadian universities outside Toronto. Please contact the CITA Business Officer if you are interested.

H. LECTURES and SEMINARS

Both the CITA professors and postdoctoral fellows give numerous colloquia and seminars at institutions across North America and around the world, as well as presentations at scientific meetings. The total number for 2009- 2010 exceeds **120**.

CITA hosted more than **100** seminars from April 2009-May 2010. CITA typically hosts 3 seminars per week. All seminars can now be viewed on the CITA website.

I. WEEKLY Astro-ph MEETINGS:

Communication in astronomy is enhanced by the Astro-ph pre-print server, which posts about 30 papers per day, submitted by astronomers from around the world. A selection of these papers (selections made primarily by CITA PDFs or grad students) are discussed for an hour over lunch on Mondays, Wednesdays, and Fridays. Since CITA PDFs cover every field in astronomy, this sharing of expertise enhances learning for everybody at CITA.

CITA ACTIVITY...

J. SCIENTIFIC EXCHANGE PROGRAM AGREEMENTS:

To enhance the scientific breadth of young researchers, as well as scientific interactions between CITA and the following institutions:

- Kavli Institute for Theoretical Astrophysics
- Max Planck Institute for Astrophysics
- Academia Sinica Institute of Astronomy and Astrophysics

K CITA and High Performance Computing:

CITA is spearheading the build-up of modern hardware for computational astrophysics. Currently CITA operates the 1600 core “Sunnyvale” cluster. We are providing access to these facilities through national programs and collaborations. Larger HPC capability for the astrophysics community is expected to be provided by SciNet a UofT campus-wide network with a 33,000 core cluster in which CITA is one of the key members. A new initiative in GPU computing by Harald Pfeiffer is in progress, with deployment expected in 2010.

L. Research Collaborations:

CITA faculty and postdoctoral fellows are engaged in international and Canadian collaborations. Examples include: the Planck/Herschel satellite mission (Bond and Martin), the WMAP cosmic microwave background satellite (Nolta); Cosmic Background Imager (Bond, Sievers); Spider Balloon-borne cosmic microwave background telescope (Bond, Dore); (ACT) - Atacama Cosmology Telescope for high resolution CMB studies (Bond, Nolta, Sievers); Planck Deep Field Radio Survey (Martin, Bond, Sievers); 21cm collaborations including: GMRT (Pen, Chang, Battaglia, Pfrommer, Sievers, Bond); CHIME (Pen, Bond, McDonald, Sievers, Vujanovic); the CMU cylinder (Pen, Chang, Vujanovic, Bond); the international CST and CFHTLS for weak lensing (Doré, Menard), among others.

CITA has made a number of joint postdoctoral fellow appointments, including three with Perimeter Institute (Boyle, Erckcek, Palenzuela), one with SciNet (Dursi) and one with Taiwan (Tzu Ching).

5. New Membership Applications and Renewals

NEW MEMBERSHIP APPLICATIONS:

- **Falk Herwig, University of Victoria**

RENEWAL APPLICATIONS:

- **Murray Alexander (NRC)**
- **Arif Babul (UVic)**
- **Shantanu Basu (Western)**
- **David A. Clarke (SMU)**
- **Alan Coley (Dalhousie)**
- **Hugh Couchman (McMaster)**
- **Martin Duncan (Queen's)**
- **David Hartwick (UVic)**
- **Richard Henrkisen (Queen's)**
- **Margo Mandy (UNBC)**
- **Peter Martin (CITA)**
- **Rachid Ouyed (Calgary)**
- **Glenn Starkman (Case Western)**
- **Ludo van Waerbeke (UBC)**
- **Don VandenBerg**
- **Michael West (ESO)**
- **Larry Widrow**

Membership of CITA Inc

Murray Alexander (NRC) 2010
Arif Babul (Victoria) 2010
Shantanu Basu (Western) 2010
Pierre Bastien (Montéal) 2014
Richard Bond (CITA) 2011
Ray Carlberg (Toronto) 2011
David Clarke (St. Mary's) 2014
Alan Coley (Dalhousie) 2010
Hugh Couchman (McMaster) 2010
Andrew Cumming (McGill) 2012
Robert Deupree (St. Mary's) 2014
Martin Duncan (Queen's) 2010
John Dubinski (Toronto) 2011
Charles Dyer (Toronto) 2011
Mike Fich (Waterloo) 2013
Jason D. Fiege (Manitoba) 2013
Andrei Frolov (SFU) 2012
Brett Gladman (UBC) 2012
David Guenther (St. Mary's) 2012
Mark Halpern (UBC) 2011
David Hartwick (Victoria) 2010
Richard Henriksen (Queen's) 2010
Jeremy Heyl (UBC) 2014
Henk Hoekstra (Victoria) 2010
Michael Hudson (Waterloo) 2011
Kim Innanen (York) 2011
Natasha Ivanova (Alberta) 2014
Doug Johnstone (HIA NRC at Victoria) 2010
Sun Kwok (Calgary) 2010
Kayall Lake (Queen's) 2011
Denis Leahy (Calgary) 2011
Margo Mandy (UNBC) 2010

Michael Marlborough (Western) 2010
Hugo Martel (Laval) 2010
Peter Martin (CITA) 2010
Christopher Matzner (Toronto) 2012
Romas Mitalas (Western) 2011
George Mitchell (St. Mary's) 2010
Sharon Morsink, (Alberta) 2011
Norman Murray (CITA) 2014
Julio Navarro (Victoria) 2014
Lorne Nelson (Bishop's) 2011
Rachid Ouyed (Calgary) 2010
Ue-Li Pen (CITA) 2013
Harald Pfeiffer (CITA) 2014
Serge Pineault (Laval) 2011
Eric Poisson (Guelph) 2011
Levon Pogosian (SFU) 2012
Dmitri Pogosyan (Alberta) 2013
Ralph Pudritz (McMaster) 2013
Douglas Scott (UBC) 2013
Ian Short (St. Mary's) 2014
Kris Sigurdson (UBC) 2014
Alison Sills (McMaster) 2013
Glenn Starkman (Case Western) 2010
Peter Sutherland (McMaster) 2011
James Taylor (Waterloo) 2013
Robert Thacker (Queen's) 2012
Chris Thompson (CITA) 2011
Don VandenBerg (Victoria) 2010
Ethan Vishniac (McMaster) 2013
Ludo van Waerbeke (UBC) 2010
James Wadsley (McMaster) 2013
Francois Wesemael (Montréal) 2012
Michael West (Hilo) 2010
Paul Wiegert (Western) 2010
Larry Widrow (Queen's) 2010
Yanqin Wu (Toronto) 2012

CITA on the WWW

CITA CAN BE FOUND AT:

<http://www.cita.utoronto.ca>

There you will find all the usual document information about CITA, a list of current personnel, Annula Reports, CITA guidelines, CITA Visitor and Seminar lists, etc.

Pillars of Support

CITA, Inc. & NSERC

NSERC support: Special Program to Collaborative Special Program to Institute Grant (as with the 3 Math Institutes, Fields, CRM, PIMS) tied in with 4 year NSERC Reallocation (1999-2003, 2003-07)

New structure for Institute Grants under MRS, Major Research Support (2008-2012).

CITA, Arts & Science@UofT

- **Institute in the School of Graduate Studies (extremely positive 5 year reviews in 1996, May 2001)**
- **Institute in the Faculty of Arts & Science, July 2005 (extremely positive reviews Fall 2006)**

CIAR Cosmology and Gravity Program

Critical node of the CIAR Cosmology and Gravity Program (3 Fellows - including Program Director until July 1, 2012)

Other:

NSERC Operating Grants for Faculty, CFI for computing, External Fellowships for PDFs, NSERC/CFI/CSA collaborative grants and other targets of opportunity