

Curriculum Vitae: Bradley Miles Stougaard Hansen

Current Position:

Associate Professor,
(07/06 –)

Dep. of Physics & Astronomy,
University of California, Los Angeles

Previous Positions Held:

Assistant Professor,
(07/02 – 06/06)
Hubble Research Fellowship,
(01/02 – 06/02)
Hubble Research Fellowship,
(9/99 – 12/01)
Junior Research Associate
(7/96 – 8/99)

Dep. of Physics & Astronomy,
University of California, Los Angeles,
Dep. of Physics & Astronomy,
University of California, Los Angeles
Department of Astrophysical Sciences
Princeton University
Canadian Institute for Theoretical Astrophysics
University of Toronto

Education:

(1991-1996) California Institute of Technology (Astronomy)
PhD 1996 Advisor: E. S. Phinney
Thesis: *The Ages, Speeds and Offspring of Pulsars*
(1986-1991) University of Natal, Durban, South Africa (Physics)
Bsc (1989) Msc (1991) Advisor: M. A. Hellberg
Thesis: *Magnetic Reconnection in the Tokoloshe Tokamak*

Personal Information:

Date of birth: 17 April 1968 Place of birth: Durban, South Africa
Nationality: South African

Phone: (310) 825-5924 email: hansen@astro.ucla.edu
Web: <http://www.astro.ucla.edu/~hansen>

Honours & Awards:

2005–2006	*Spitzer Telescope Grant: GO-20101 (\$17,530)
2005–2006	†NASA HST Grant: GO-10424.08 (\$ 97,232)
2004–2006	Alfred P. Sloan Foundation Fellowship (\$ 40,000)
2004–2006	*NASA ATP Grant: ATP03-0000-0084 (\$ 181,977)
2004–2005	*Spitzer Telescope Grant: GO-3309 (\$ 9,000)
2004–2007	†Space Interferometry Mission grant (\$ 27,000)
2003–2008	†NASA Astrobiology Institute UCLA Node
2001–2002	†NASA HST Grant: GO-8679 (\$ 50,000)
1999–2002	Hubble Postdoctoral Research Fellowship
1990–1991	Foundation for Research and Development Masters Scholarship
1989	Foundation for Research and Development Honours Scholarship Physics Honours Prize (shared), Univ. of Natal, Durban
1988	Physics Major Prize, Univ. of Natal, Durban Mathematics Major Prize, Univ. of Natal, Durban Univ. of Natal Undergraduate Scholarship

* denotes principal investigator on original science proposal

† denotes co-investigator on original science proposal

Activities & Memberships:

Member: American Astronomical Society

Peer Review referee for the following journals/organisations:

*Nature, Science, Astrophysical Journal, Astronomy and Astrophysics,
Monthly Notices of the Royal Astronomical Society, Canada-France-Hawaii Telescope*

Member, Scientific Conference Organising Committee:

Stellar Collisions, Mergers and their Consequences

American Museum of Natural History, New York, May 2000

Formation and Evolution of Globular Clusters

Institute for Theoretical Physics, Santa Barbara, Jan 2003

co-Investigator, UCLA Node of Astrobiology Institute

NSF Grant Review Panel 2005 (Compact Objects);

Hubble Telescope Review: Galactic Panel 2006,2007

Spitzer Telescope Review: 2007

Teaching Experience:

UCLA

2006-2007 Astro 5: Life in the Universe (undergrad GE)
Astro 82: Introductory Astrophysics (undergrad majors)
2005-2006 Astro 5: Life in the Universe (undergrad GE)
Astro 82: Introductory Astrophysics (undergrad majors)
2004-2005 Astro 127: Stellar Structure (senior majors)
Astro 270: Astrophysical Fluid Dynamics (graduate)
2003-2004 Astro 5: Life in the Universe (undergrad GE)
Astro 272: Stellar Structure (graduate)
2002-2003 Astro 82: Introductory Astrophysics (undergrad majors)
Astro 270: Astrophysical Fluid Dynamics (graduate)
2002- Supervision of graduate research

Toronto

1998 Minicourse on Compact Objects (graduate)
1998-2001 Supervision of undergraduate research

Caltech

1992-1995 Graduate Teaching Assistant

University of Natal

1989-1990 Undergraduate Laboratory Instructor

Administrative Experience:

Department of Physics

- 2004 – 2007 Physics Colloquium Committee
 - Appointments & Strategic Planning Committee
 - Undergraduate Advisor (Astronomy)
- 2003 – 2004 Committee on Academic Affairs
 - Undergraduate Advisor (Astronomy)
 - Astronomy Strategic Plan Committee
- 2002 – 2003 Graduate Admissions Committee
 - Astronomy Colloquium Chairman (winter & spring quarters)

Institute of Geophysics & Planetary Physics

- 2006 – 2007 Space Allocation
- 2004 – 2005 Awards Committee
- 2002 – 2004 Researchers Committee

Refereed Publications:

The chemical composition of an extrasolar minor planet [50]
B. Zuckerman, D. Koester, C. Melis, **B. Hansen** & M. Jura
to appear in the *Astrophysical Journal*

Stellar Evolution in NGC 6791: Mass Loss and formation of Low Mass White Dwarfs [49]
J. Kalirai, P. Bergeron, **B. Hansen**, D. Kelson, D. Reitzel, R. Rich & H. Richer.
to appear in the *Astrophysical Journal*

The White Dwarf Cooling Sequence of NGC 6397 [48]
B. Hansen, J. Anderson et al.
Astrophysical Journal, in press (2007)

Cool Customers in the Stellar Graveyard IV: [47]
J. Debes, S. Sigurdsson & **B. Hansen**
Astrophysical Journal, in press (2007)

The Evolution of Protoplanetary Disks around Millisecond Pulsars [46]
T. Currie & **B. Hansen**
Astrophysical Journal, in press (2007)

Hot Jupiter Variability in Eclipse Depth [45]
E. Rauscher, K. Menou, J. Cho, S. Seager, & **B. Hansen**
Astrophysical Journal Letters, 662, L115 (2007)

Toward Eclipse Mapping of Hot Jupiters [44]
E. Rauscher, K. Menou, S. Seager, D. Deming, J. Cho & **B. Hansen**
Astrophysical Journal, 664, 1119 (2007)

The Space Motion of the Globular Cluster NGC 6397 [43]
J. Kalirai, J. Anderson et al.
Astrophysical Journal, 657, L93 (2007)

The Phase-Dependent Infra-Red Brightness of the Extrasolar Planet ν Andromeda b [42]
J. Harrington, **B. Hansen**, S. Luszcz, D. Deming, S. Seager, K. Menou, J. Cho & L. J. Richardson
Science, 314, 623 (2006)

Probing the Faintest Stars in a Globular Cluster [41]
H.B.Richer & many more
Science, 313, 935 (2006)

Star Cluster Dynamics in the Galactic Center [40]

S. Berukoff & **B. Hansen**

Astrophysical Journal 650, 901 (2006)

The Galaxy Hosts and Large-Scale Environments of Short-Hard Gamma-Ray Bursts [39]

J. Prochaska, J. Bloom, et al

Astrophysical Journal Letters, 642, 989 (2006)

A Spitzer Search for Infrared Excesses around Young Massive White Dwarfs [38]

B. Hansen, S. R. Kulkarni & S. Wiktorowicz

Astronomical Journal 131, 1106 (2006)

White Dwarfs in NGC 6791: Avoiding the Helium Flash [37]

B. Hansen

Astrophysical Journal 635, 522 (2005)

On the Dayside Thermal Emission of Hot Jupiters [36]

S. Seager, L. J. Richardson, **B. Hansen**, K. Menou, J. Cho & D. Deming

Astrophysical Journal 632, 1122 (2005)

The Dearth of Massive, Helium-Rich White Dwarfs in Young Open Star Clusters [35]

J. Kalirai, H. Richer, **B. Hansen**, D. Reitzel & R. Rich

Astrophysical Journal Letters, 618, L129 (2005)

The Initial-Final Mass Relationship: Spectroscopy of White Dwarfs in NGC 2099 (M37) [34]

J. Kalirai, H. Richer, D. Reitzel, **B. Hansen**, R. Rich, G. Fahlman, B. Gibson & T. von Hippel

Astrophysical Journal Letters, 618, L123 (2005)

HST observations of the white dwarf cooling sequence of the globular cluster Messier 4 [33]

Hansen, B., Richer, H. B., et al.,

Astrophysical Journal Supplements, 155, 551 (2004)

The Astrophysics of Cool White Dwarfs [32]

Hansen, B.

Physics Reports, 399, 1 (2004)

Concerning the White Dwarf Cooling Age of M4: A Reply to De Marchi et al. [31]

Richer, H. B., et al.,

Astronomical Journal, 127, 2904 (2004)

Hubble Space Telescope Observations of the Main Sequence of M4 [30]

Richer, H. B. et al.,

Astronomical Journal, 127, 2771 (2004)

Cool White Dwarfs Revisited: New Spectroscopy and Photometry[29]

S. Salim, R. M. Rich, **B. M. S. Hansen**, L. V. E. Koopmans, B. R. Oppenheimer & R. D. Blandford,

Astrophysical Journal, 601, 1075 (2004)

The Galactic Inner Halo: Searching for White Dwarfs and measuring the fundamental Galactic Constant, V0/R0 [28]

J. S. Kalirai, et al.,

Astrophysical Journal, 601, 277 (2004)

Searching for variability in the globular cluster Messier 4 [27]

R. D. Ferdman, et al.,

Astronomical Journal, 127, 601 (2004)

The need for a second black hole in the Galactic Center[26]

B. M. S. Hansen & M. Milosavljevic,

Astrophysical Journal, 593, L77 (2003)

A young white dwarf companion to pulsar B1620-26: Evidence for early planet formation [25]

S. Sigurdsson, H. B. Richer, **B. M. S. Hansen**, I. H. Stairs & S. E. Thorsett,

Science, 301, 193 (2003)

Cool White Dwarfs [24]

B. M. S. Hansen & J. Liebert,

Annual Reviews of Astronomy & Astrophysics, 41, 465 (2003)

The changing face of the extrasolar giant planet HD209458b [23]

J. Cho, K. Menou, **B. M. S. Hansen** & S. Seager

Astrophysical Journal, 587, L117 (2003)

Weather Variability of Close-in Giant Planets [22]

K. Menou, J. Cho, S. Seager & **B. M. S. Hansen**,

Astrophysical Journal, 587, L113 (2003)

Helium Core White Dwarfs in Globular Clusters [21]

B. M. S. Hansen, V. Kalogera & F. A. Rasio,

Astrophysical Journal, 586, 1364 (2003)

Type Ia Supernovae and High Velocity White Dwarfs [20]

B. M. S. Hansen,

Astrophysical Journal, 582, 915 (2003)

The White Dwarf Cooling Sequence of the Globular Cluster Messier 4 [19]

B. M. S. Hansen et al.,

Astrophysical Journal, 574, L155 (2002)

The Main Sequence and Mass Function of the Globular Cluster Messier 4 [18]

H. B. Richer et al.,

Astrophysical Journal, 574, L151 (2002)

Sloan Digital Sky Survey: Early Data Release [17]

C. Stoughton et al.,

Astronomical Journal, 123, 485 (2002)

Halo White Dwarfs, Thick Disks and a Sanity Check. [16]

B. M. S. Hansen,

Astrophysical Journal, 558, L39 (2001)

Stellar Pollution in the Solar Neighbourhood [15]

N. Murray, B. Chaboyer, P. Arras, **B. Hansen,** & R. W. Noyes,

Astrophysical Journal, 555, 801 (2001)

Radio and X-ray signatures of merging neutron stars [14]

B. M. S. Hansen & M. Lyutikov,

Monthly Notices of Royal Astronomical Society, 322, 695 (2001)

A New Very Cool White Dwarf discovered by the Sloan Digital Sky Survey [13]

H. C. Harris, **B. M. S. Hansen,** et al.,

Astrophysical Journal, 549, L109 (2001)

Isochrones and Luminosity Functions for Old White Dwarfs [12]

H. B. Richer, **B. Hansen,** et al.,

Astrophysical Journal, 529, 318 (2000)

Early Planet Formation as a trigger for further planet formation [11]

P. J. Armitage & **B. M. S. Hansen,**

Nature, 402, 633 (1999)

The Origin of Primordial Dwarf Stars and Baryonic Dark Matter [10]

B. M. S. Hansen,

Astrophysical Journal Letters, 517, L39 (1999)

Cooling Models for Old White Dwarfs [9]

B. M. S. Hansen,

Astrophysical Journal, 520, 680 (1999)

On the Frequency and Remnants of Hypernovae [8]

B. M. S. Hansen,

Astrophysical Journal Letters, 512, L117 (1999)

Neutron Star Retention and Millisecond Pulsar Production in Globular Clusters [7]

M. B. Davies & **B. M. S. Hansen,**

Monthly Notices of Royal Astronomical Society, 301, 15 (1998)

Old and Blue White Dwarfs as a detectable source of microlensing events [6]

B. M. S. Hansen,

Nature, 394, 860 (1998)

Gamma Ray Bursts from Stellar Collisions [5]

B. M. S. Hansen & C. Murali,

Astrophysical Journal Letters, 505, L15 (1998)

Migrating Planets [4]

N. Murray, **B. Hansen**, M. Holman & S. Tremaine,

Science, 279, 69 (1998)

Stellar Forensics: II - Millisecond Pulsar Binaries [3]

B.M.S.Hansen & E.S.Phinney,

Monthly Notices of Royal Astronomical Society, 294, 569 (1998)

Stellar Forensics: I - Cooling Curves [2]

B.M.S.Hansen & E.S.Phinney,

Monthly Notices of Royal Astronomical Society, 294, 557 (1998)

The Pulsar Kick Velocity Distribution [1]

B.M.S.Hansen & E.S.Phinney,

Monthly Notices of Royal Astronomical Society, 291, 569 (1997)

Popular Articles

Discoveries from the Stellar Graveyard [2]

B. M. S. Hansen

in *Hubble 2004: Science Year in Review*, pg 18–23 (2004)

A Bright Future for Dark Matter [1]

B.M.S.Hansen

Nature, 403, 30 (2000)

Circulars/Telegrams

GRB 0507024: Secure Host Redshift from Keck [1]

J.X.Prochaska, J.S.Bloom, H.W.Chen, **B. Hansen**, J.S.Kalirai, M.Rich & H. B. Richer,
GCN 3700:

Submitted

The Initial-Final Mass Relation: First Constraints at the Low Mass End

J. Kalirai, **B. Hansen**, D. Kelson, D. Reitzel, R. Rich & H. Richer

submitted to *Astrophysical Journal*

On the absorption and redistribution of energy in irradiated planets

B. Hansen

submitted to *Astrophysical Journal Supplements*

Two Classes of Hot Jupiters

B. Hansen & T. Barman

submitted to *Astrophysical Journal*

Atmospheric Circulation of Close-in Extrasolar Giant Planets I: Global, Barotropic, Adiabatic Simulations.

J. Cho, K. Menou, **B. Hansen** & S. Seager

submitted to *Astrophysical Journal Supplements*

Publications in Conference Proceedings:

Exceptional Stars: Origins, Companions, Masses & Planets
S.R.Kulkarni, B. Hansen, E. S. Phinney, M. van Kerkwijk & G. Vasisht
in *Science with the Space Interferometry Mission: Project Summaries*

Theoretical Implications of White Dwarf Observations
B.M.S.Hansen, in
Online Proceedings: *KITP Workshop of Globular Clusters*
http://online.kitp.ucsb.edu/online/clusters_c03/hansen/

Stellar Collisions & Pulsar Planets
B.M.S.Hansen, in
Stellar Collisions, Mergers & their Consequences, ed. M.Shara (2000)
/astro-ph/0008226

Old White Dwarfs as a Microlensing Population,
B.M.S.Hansen, in
Microlensing 2000, ed. J.Menzies & P.Sackett (2000)
/astro-ph/0004133

Millisecond Pulsar Ages & Spin Periods
B.M.S.Hansen, in
Neutron Stars & Pulsars: Thirty Years after the discovery, ed. N.Shibazaki et al, pg 191 (1998)

The Pulsar Planet Production Process
E.S. Phinney, B.M.S. Hansen, in "Planets Around Pulsars" (ed. J.A.Phillips et al)
ASP Conference Series Volume 36 pp 371 (ASP, 1993)

Locked mode disruptions and their avoidance on Tokoloshe tokamak
D.E. Roberts, J.D. Fletcher, G.W. van Vuuren, G. Nothnagel, D. Sherwell,
J.A.M. de Villiers, M.A. Hellberg, B.M.S. Hansen, M.J. Alport, in Proc Meeting of the
IAEA Technical Committee on the Avoidance and Control of Tokamak Disruptions,
Culham Laboratory, UK (Ed. T Todd), pp65-70 (IAEA, 1992)

Linear and nonlinear modelling of island control in tokamaks
B.M.S. Hansen, M.A. Hellberg, D. Sherwell, D.E. Roberts, W.S. McLoud, in
Proc Int Conf on Plasma Physics (Innsbruck, Austria), Vol II, 1397-1400 (1992)

Controlled wall boundary conditions in Tokoloshe tokamak
B.M.S. Hansen, M.A. Hellberg, D. Sherwell, D.E. Roberts, W.S. McLoud, in
Plasma Phys Div meeting of the APS (Tampa, Fla). Bull APS 36, 2501 (1991)

Recent Invited Talks:

Science Talks

2007

Scratching the Surface of Hot Jupiters

Lowell Observatory, CalTech

2006

Hot Jupiters, Lands of Plenty

Lawrence Livermore National Lab

The White Dwarf Cooling Sequence of NGC 6397

UC Berkeley

Transport of Stars by an Intermediate Mass Black Hole

Harvard (Sackler Conference)

2005

White Dwarfs in Star Clusters

Los Alamos, UC Irvine, Princeton, Columbia

2004

A Second Black Hole at the Galactic Center

Spitzer Science Center, New York University

Penn State University, UC Santa Cruz

The White Dwarf Cooling Sequence in M4

Harvard University, Cal State LA

2003

A Second Black Hole at the Galactic Center

Radcliffe Institute, Goddard Space Flight Center

Gravitational Waves from Intermediate Mass Black Holes

Penn State University

The White Dwarf Cooling Age of M4

JPL, UC Santa Cruz

Things you can do with 123 HST Orbits

New York University

Theoretical Implications of White Dwarf Observations

University of California, Santa Barbara

Public Talks

The Age of the Universe

Los Angeles Futurist Society

Inter-Faith Conference on Creation, Beverly Hills Presbyterian Church

White Dwarf Cooling

Los Angeles Amateur Astronomy Society

Pulsar Planets

Santa Monica College