François Rigaut

Curriculum Vitae

About

Employment and education

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Languages

Fluent in French/English/Spanish Notions of Italian/German

Acronyms

1999-2012

AO = Adaptive Optics MCAO = Multi-Conjugate AO GeMS = Gemini MCAO system LGS = Laser Guide Star GMT = Giant Magellan Telescope

Programming

Yorick Python, C, IDL CSS3 & HTML5

since 2012 Associate Professor / AO Group Leader

Mount Stromlo Observatory, RSAA, ANU At the Research School of Astronomy and Astrophysics, Australian National University, I am heading the Adaptive Optics group, comprising (AO) scientists, postdocs and students. When I joined the RSAA at the ANU in 2012, work was proceeding on the Giant Magellan Telescope Laser Tomography System and the Adaptive Optics Demonstrator (in collaboration with EOS). Since then, bridging a gap in the GMT funding, we have successfully diversified our activities: We won an ARC grant for the design and construction of NGS2, an innovative focal plane upgrade for the GeMS Natural Guide Star Wavefront sensor; We produced a satellite imaging AO system for the Korean Astronomy Space Science Institute (KASI) in association with EOS; We built up comprehensive AO laboratory facilities. Most importantly, ANU is a core partner in the Space Environment Management Cooperative Research Centre (http://www.serc.org.au, federal funding of \$20M over 5 years). This CRC is investigating solutions to the space debris problem, which threatens the viability of the entire low earth orbit environment. Thanks to the CRC funding and internal RSAA commitments, our group is growing; we just hired two postdocs and have signed up to train six PhD students in the next four years.

Lead Adaptive Optics Scientist

The Gemini Observatory is a multinational organisation managing two 8-m telescopes, located in Hawaii and Chile. Over the period I worked at Gemini, the total investment in AO has been close to \$40M. I was coordinating the program on the Adaptive Optics science side, consulting with our community, setting goals and requirements, facilitating the design of the instruments and commissioning them. In 2006, I moved from Hawaii to the Chile Gemini South headquarters to concentrate on the Multi-Conjugate Adaptive Optics instrument, which was

Gemini Observatory, Hawaii/Chile

ESO. Munich. Germany

1997-1999 **Head of the Adaptive Optics Group**

> ESO -the European Southern Observatory, - with over 550 employees, is the largest European Organisation for Astronomy. I was heading there a 13 person group in the instrumentation division. My responsibilities, on top of the group management, included defining future AO instrumentation for the VLT (Very Large Telescope array), following instrument design and fabrication.

1992-1997 **Project Scientist for the Adaptive Optics Bonnette**

successfully commissioned in 2011/2012.

CFHT, Hawaii, USA Thanks to its ease of use, reliability and performance, PUEO, the Canada-France-Hawaii Telescope AO bonnette, has been for a long time the most successful AO instrument in the world. I heavily participated in the design phase, led the instrument commissioning, and insured that the community put it to good use.

1989-1992 PhD Observatoire de Paris-Meudon, France

Under the supervision of Prof. Pierre Léna, my PhD thesis, entitled "Applications of Adaptive Optics to Astronomy", was one of the precursor work in this field. I worked on the first AO system dedicated to astronomy, and acted as the *de facto* person-in-charge for its commissioning. This allowed me to gain first hand

experience on the behavior and performance of AO systems.

06/1987 **Master of Science** Paris VII University, France

"Astrophysique et Techniques Spatiales"

06/1986 Bachelor of Physics (Maîtrise) Université Claude Bernard, Lyon, France

Achievements and awards

Below are career achievements I am most proud of, sorted by order of importance (to me), most important first.

1992-today Characterisation of real-world AO systems performance

"First diffraction-limited astronomical images with adaptive optics", 244 citations (citation counts from Google scholar, as of November 2015), "Adaptive optics on a 3.6-m telescope- Results and performance", 145 citations and "Performance of the Canada-France-Hawaii Telescope adaptive optics bonnette", 215

citations.

1999-2012 **GeMS**

GeMS, the Gemini MCAO facility instrument, is the first and only Laser Guide Star Multi-Conjugate AO system for night time astronomy. By using a combination of 5 laser guide stars, associated wavefront sensors, and 3 deformable mirrors, this system provides 10x improvement in compensated sky area compared to classical AO systems. Commissioned in 2011-2012, it is now available to the Gemini astronomical community ("Gemini multiconjugate adaptive optics system review—I and II"). Science papers published from data obtained with GeMS can be found in the Gemini paper archive.

2001 Seminal paper on Ground Layer AO

I invented the concept of Ground Layer Adaptive Optics (now used in several of the largest telescopes –e.g. ESO VLT, LBT– and planned for the majority of extremely large telescopes – the European ELT and the GMT, a total capital investment of over US\$2.6 Billions) and wrote the first paper analysing its performance potential ("Ground-conjugate wide field adaptive optics for the ELTs", 103 citations).

1998 Analytic modelling of AO system performance

I invented a novel way (Fourier analysis) of modelling AO performance, followed and built upon by many researchers ("An Analytical model for Shack- Hartmann-hazard adaptive antice systems", O.7 sitations)

based adaptive optics systems", 97 citations).

1992 First assessment of sky coverage in LGS mode and first analytical derivation of noise

in Shack-Hartmann systems

"Laser guide star in adaptive optics - The tilt determination problem", 216 cita-

tions.

2015 **h-index of 38 (i-10 index of 96)**

According to google scholar. In 2008, I was listed by Google Scholar within the 4 main "key authors" in "Adaptive Optics", along Hardy, Roddier and Wizinowich

(since then, Google discontinued this type of ranking).

1994-today **A0 simulation packages (yao)**

I have written several extensive open-source AO Monte-Carlo simulation tools, used by a large fraction of the AO community (GMT, LBT, Keck, CFHT, UofH, Comini, ESO, NSO, CTC, and many mars)

Gemini, ESO, NSO, GTC, and many more).

1992-today **Design and commissioning of AO systems**

I have been the instrument scientist or PI for many successful AO systems: COME-ON (ESO), PUEO (CFHT), Altair (Gemini) and MCAO (Gemini). These instruments represent a cumulative investment of (2015\$) US\$32.4M (involved as PI/Project Scientist) and US\$16M (involved in a managerial position at ESO).

1994-today **Teaching & mentoring**

I have co-directed the PhD thesis of Olivier Lai (defense in 1996), Jean-Pierre Véran (defense in 1997) and Ralf Flicker (defense in 2003). All obtained their PhD with honours and the first two now hold permanent positions in France and in Canada. I have also mentored a dozen of short term/summer students

in the past 10 years.

1996-today Review panels

Chair or member of numerous review panels, including E-ELT telescope readi-

ness reviews, GMT AO, LBT ARGOS, CANARY & many AO systems

Awards

2012 AURA Technology/Innovation Award

Granted for the Gemini MCAO system first light

2012 AURA Team Award

Granted to the GeMS team for the Gemini MCAO system first light

1999 AURA Science Award

Granted for the Gemini MCAO system design concept

Experience, skills & hobbies

Instrumentation

Detailed knowledge and extensive experience in optics, control systems, complex systems, computer hardware, detectors. Broad knowledge in electronics and mechanics.

Computers and coding

I have extensive experience in data analysis, computer simulations and associated languages (Yorick, IDL, some iraf, see the yao website for an example of an AO simulation package I released), web design (html, php) and administration, Unix, Linux, MacOsX. I am an active proponent of open-source software and a co-admin of sourceforge.net project (yorick). I am also proficient in linux, including system administration and package management; I have maintained ubuntu, fedora, mandriva, and archlinux repositories.

Other interests

Cooking, cycling, motorcycling, reading, listening to classical, electronica and world music, diving, hiking, skiing, helping others with computers.

I am also the team leader of my local Community Fire Unit in Canberra Duffy, an organisation of volunteers that provide help and support to fire crews.

Complete publication list

Sorted according to the number of citations (not reported here, see google scholar for details).

Refereed journals

Astronomical Adaptive Optics

François Rigaut

Publications of the Astronomical Society of the Pacific 127.958 (2015) p. 1197. IOP Publishing, 2015

Gemini multiconjugate adaptive optics system review-I. Design, trade-offs and integration

François Rigaut, Benoit Neichel, Maxime Boccas, Céline d'Orgeville, Fabrice Vidal, Marcos A Dam, Gustavo Arriagada, Vincent Fesquet, Ramon L Galvez, Gaston Gausachs

Monthly Notices of the Royal Astronomical Society (2013) stt2054. Oxford University Press, 2013

Performance of the Canada-France-Hawaii Telescope Adaptive Optics Bonnette

Francois Rigaut, D Salmon, R Arsenault, J Thomas, O Lai, D Rouan, JP Véran, P Gigan, David Crampton, JM Fletcher

Publications of the Astronomical Society of the Pacific 110.744 (1998) pp. 152-164. JSTOR, 1998

First diffraction-limited astronomical images with adaptive optics

G Rousset, JC Fontanella, P Kern, P Gigan, F Rigaut

Astronomy and Astrophysics 230 (1990) pp. L29-L32. 1990

Estimation of the adaptive optics long-exposure point-spread function using control loop data

Jean-Pierre Véran, François Rigaut, Henri Maître, Daniel Rouan

JOSA A 14.11 (1997) pp. 3057-3069. Optical Society of America, 1997

Laser guide star in adaptive optics-The tilt determination problem

F Rigaut, E Gendron

Astronomy and Astrophysics 261 (1992) pp. 677-684. 1992

The Gemini deep planet survey

David Lafreniere, René Doyon, Christian Marois, Daniel Nadeau, Ben R Oppenheimer, Patrick F Roche, François Rigaut, James R Graham, Ray Jayawardhana, Doug Johnstone

The Astrophysical Journal 670.2 (2008) p. 1367. IOP Publishing, 2008

Pleiades low-mass binaries: do companions affect the evolution of protoplanetary disks?

J Bouvier, F Rigaut, D Nadeau

Astronomy and Astrophysics 323 (1997) pp. 139-150. 1997

Adaptive optics on a 3.6-m telescope-Results and performance

F Rigaut, G Rousset, P Kern, JC Fontanella, JP Gaffard, F Merkle, P Léna

Astronomy and Astrophysics 250 (1991) pp. 280-290. 1991

Modal tomography for adaptive optics

Roberto Ragazzoni, Enrico Marchetti, François Rigaut

Astronomy and Astrophysics 342 (1999) pp. L53–L56. 1999

New results on the helium stars in the galactic center using BEAR spectro-imagery

T Paumard, JP Maillard, M Morris, F Rigaut

Astronomy and Astrophysics 366.2 (2001) pp. 466-480. 2001

The nature of the Galactic Center source IRS 13 revealed by high spatial resolution in the infrared JP Maillard, T Paumard, SR Stolovy, F Rigaut

Astronomy and Astrophysics 423.1 (2004) pp. 155-167. EDP Sciences, 2004

Near-IR images of the torus and micro-spiral structure in NGC 1068 using adaptive optics

D Rouan, F Rigaut, D Alloin, R Doyon, O Lai, D Crampton, E Gendron, R Arsenault arXiv preprint astro-ph/9807053 (1998). 1998

Methods for correcting tilt anisoplanatism in laser-guide-star-based multiconjugate adaptive optics

Brent L Ellerbroek, François Rigaut

JOSA A 18.10 (2001) pp. 2539–2547. Optical Society of America, 2001

Giant luminous arcs from lensing-Determination of the mass distribution inside distant cluster cores

F Hammer, F Rigaut

Astronomy and Astrophysics 226 (1989) pp. 45-56. 1989

Comparison of curvature-based and Shack-Hartmann-based adaptive optics for the Gemini telescope

François Rigaut, Brent L Ellerbroek, Malcolm J Northcott

Applied optics 36.13 (1997) pp. 2856–2868. Optical Society of America, 1997

Molecular hydrogen morphology, kinematics and excitation in AFGL 2688 and NGC 7027.

P Cox, J-P Maillard, PJ Huggins, T Forveille, D Simons, S Guilloteau, F Rigaut, R Bachiller, A Omont Astronomy and Astrophysics 321 (1997) pp. 907–920. 1997

One-dimensional energy migration in crystalline and columnar liquid-crystalline phases of 2,3,6,7,10,11-hexa-n-hexyloxytriphenylene

Dimitra Markovitsi, Francois Rigaut, Mona Mouallem, Jacques Malthête

Chemical Physics Letters 135.3 (1987) pp. 236-242. 1987

The Star Formation Histories of the Bulge and Disk of M31 from Resolved Stars in the Near-Infrared

Knut AG Olsen, Robert D Blum, Andrew W Stephens, Tim J Davidge, Philip Massey, Stephen E Strom, François Rigaut

The Astronomical Journal 132.1 (2007) p. 271. IOP Publishing, 2007

Morphology and kinematics of eta Carinae

WJ Duschl, K-H Hofmann, F Rigaut, G Weigelt arXiv preprint astro-ph/9410090 (1994). 1994

Ceres surface properties by high-resolution imaging from Earth

O Saint-Pe, M Combes, F Rigaut

Icarus 105.2 (1993) pp. 271–281. Elsevier, 1993

Adaptive optics-band observations of the Galactic Center region

Y Clénet, D Rouan, E Gendron, J Montri, F Rigaut, P Léna, F Lacombe

Astronomy and Astrophysics 376.1 (2001) pp. 124-135. 2001

The stellar content near the Galactic center

TJ Davidge, DA Simons, F Rigaut, R Doyon, D Crampton arXiv preprint astro-ph/9710146 (1997). 1997

High Spatial Resolution Near-Infrared Imaging of the Central Regions of M31

TJ Davidge, F Rigaut, R Doyon, D Crampton

The Astronomical Journal 113 (1997) p. 2094. 1997

Interferometric coupling of the Keck telescopes with single-mode fibers

G Perrin, J Woillez, O Lai, J Guérin, T Kotani, PL Wizinowich, D Le Mignant, M Hrynevych, J Gathright, P Léna

Science 311.5758 (2006) pp. 194-194. American Association for the Advancement of Science, 2006

Detection of a 400-AU Disk like Structure Surrounding the Young Stellar Object Z-Canis

F Malbet, F Rigaut, C Bertout, P Lena

Astronomy and Astrophysics 271 (1993) p. L9. 1993

Performance of the near-infrared coronagraphic imager on Gemini-South

Mark Chun, Doug Toomey, Zahed Wahhaj, Beth Biller, Etienne Artigau, Tom Hayward, Mike Liu, Laird Close, Markus Hartung, Francois Rigaut

arXiv preprint arXiv:0809.3017 (2008). 2008

Demonstration of adaptive optics for resolved imagery of solar system objects: preliminary results on Pallas and Titan

O Saint-Pé, M Combes, F Rigaut, M Tomasko, M Fulchignoni

Icarus 105.2 (1993) pp. 263-270. Elsevier, 1993

Characterizing the Adaptive Optics Off-Axis Point-Spread Function. I. A Semiempirical Method for Use in Natural Guide Star Observations1, 2

E Steinbring, SM Faber, S Hinkley, BA Macintosh, D Gavel, EL Gates, Julian C Christou, M Le Louarn, LM Raschke, Scott A Severson

Publications of the Astronomical Society of the Pacific 114.801 (2002) pp. 1267–1280. JSTOR, 2002

Adaptive optics observations of ultra-luminous infrared galaxies I. J, H, K images of Mkn 231

O Lai, D Rouan, F Rigaut, R Arsenault, E Gendron

Astronomy and Astrophysics 334 (1998) pp. 783–788. 1998

Probable additional gravitational images related to the CL 2244-02 arc and B, V, R photometry of the cluster core

F Hammer, F Rigaut, O Le Fevre, J Jones, G Soucail Astronomy and Astrophysics 208 (1989) pp. L7–L10. 1989

The K-band spectrum of the hot star in irs 8: An outsider in the galactic center?

TR Geballe, F Najarro, F Rigaut, J-R Roy

The Astrophysical Journal 652.1 (2008) p. 370. IOP Publishing, 2008

Near-infrared, kilosecond variability of the wisps and jet in the crab pulsar wind nebula

Andrew Melatos, D Scheltus, MT Whiting, SS Eikenberry, RW Romani, F Rigaut, A Spitkovsky, J Arons, DJB Payne

The Astrophysical Journal 633.2 (2008) p. 931. IOP Publishing, 2008

Asteroids as reference stars for high resolution astronomy

EN Ribak, F Rigaut

Astronomy and Astrophysics 289 (1994) pp. L47-L50. 1994

About the origin of extinction in the gravitational lens system MG J0414+ 0534

M-C Angonin-Willaime, C Vanderriest, F Courbin, I Burud, Pierre Magain, F Rigaut Astronomy and Astrophysics 347 (1999) pp. 434–441. 1999

A Bow Shock of Heated Dust Surrounding Galactic Center Source IRS 8

TR Geballe, F Rigaut, J-R Roy, BT Draine

The Astrophysical Journal 602.2 (2008) p. 770. IOP Publishing, 2008

Stellar Crowding and the Science Case for Extremely Large Telescopes

Knut AG Olsen, Robert D Blum, François Rigaut

The Astronomical Journal 126.1 (2007) p. 452. IOP Publishing, 2007

Adaptive optics observations of luminous infrared galaxies. II. Imaging of the merging galaxy Arp

O Lai, D Rouan, F Rigaut, R Doyon, F Lacombe

Astronomy and Astrophysics 351 (1999) pp. 834–840. 1999

Astronomy: Optics adapt to the whole sky

Brent Ellerbroek, François Rigaut

Nature 403.6765 (2000) pp. 25-26. Nature Publishing Group, 2000

Anisoplanatic deconvolution of adaptive optics images

Ralf C Flicker, François J Rigaut

JOSA A 22.3 (2005) pp. 504–513. Optical Society of America, 2005

Visible and infrared wavefront sensing for astronomical adaptive optics

F Rigaut, JG Cuby, M Caes, JL Monin, M Vittot, JC Richard, G Rousset, P Lena

Astronomy and Astrophysics 259 (1992) pp. L57–L60. 1992

Successful tests of adaptive optics.

F Merkle, P Kern, P Léna, F Rigaut, JC Fontanella, G Rousset, C Boyer, JP Gaffard, P Jagourel The Messenger 58 (1989) pp. 1–4. 1989

Imaging and spectroscopy of B 1422+ 231 at CFHT: identification of the mirage and of the lensing galaxy at z= 0.647.

F Hammer, F Rigaut, M-C Angonin-Willaime, C Vanderriest

Astronomy and Astrophysics 298 (1995) p. 737. 1995

CFHT adaptive optics: first results at the telescope

O Lai, Jean-Pierre Veran, Francois J Rigaut, Daniel Rouan, Pierre Gigan, Francois Lacombe, Pierre J Lena, Robin Arsenault, Derrick A Salmon, James Thomas

Optical Telescopes of Today and Tomorrow (1997) pp. 859-870. 1997

The Ultimate CCD for Laser guide star wavefront sensing on Extremely Large Telescopes

James W Beletic, Sean Adkins, Barry Burke, Robert Reich, Bernie Kosicki, Vyshnavi Suntharalingham, Charlie Bleau, Ray DuVarney, Richard Stover, Jerry Nelson

Experimental Astronomy 19.1 (2005) pp. 103–109. Springer, 2005

Seeing measurements with a differential image motion monitor.

H Pedersen, F Rigaut, M Sarazin

The Messenger 53 (1988) pp. 8-9. 1988

Fixing the LGS tilt problem using tomography

Roberto Ragazzoni, François Rigaut

Astronomy and Astrophysics 338 (1998) pp. L100-L102. 1998

On practical aspects of laser guide stars

François Rigaut, Céline d'Orgeville

Comptes Rendus Physique 6.10 (2005) pp. 1089-1098. Elsevier, 2005

A Bow Shock of Heated Dust Surrounding IRS 8

F Rigaut, TR Geballe, J-R Roy, BT Draine

Astronomische Nachrichten 324.S1 (2003) pp. 551-555. Wiley Online Library, 2003

Adaptive optics at the ESO 3.6-m telescope.

F Merkle, G Gehring, F Rigaut, P Kern, P Gigan, G Rousset, C Boyet

The Messenger 60 (1990) pp. 9-12. 1990

An algorithm for crowded stellar fields analysis

E Diolaiti, O Bendinelli, D Bonaccini, G Parmeggiani, F Rigaut

Astronomy with Adaptive Optics: present results and future programs (1999) p. 175. Citeseer, 1999

The Galactic Center Source IRS 13E: a Star Cluster

Jean-Pierre Maillard, Thibaut Paumard, Susan Stolovy, François Rigaut

Astronomische Nachrichten 324.S1 (2003) pp. 263-269. Wiley Online Library, 2003

The Ultimate CCD for Laser guide star wavefront sensing on Extremely Large Telescopes

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Scientific detectors for astronomy 2005 (2006) pp. 329-336. Springer, 2006

Atmospheric turbulence profiling using multiple laser star wavefront sensors

Angela Cortés, Benoit Neichel, Andrés Guesalaga, James Osborn, Francois Rigaut, Dani Guzman Monthly Notices of the Royal Astronomical Society 427.3 (2012) pp. 2089–2099. Oxford University Press, 2012

Gemini North Galactic Center Demonstration Science Project

Angela Cotera, Francois Rigaut

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An upper limit to the sodium layer longitudinal and transversal altitude structure function from MCAO data

Francois Rigaut, Benoit Neichel

Monthly Notices of the Royal Astronomical Society: Letters 432.1 (2013) pp. L21-L25. Oxford University Press, 2013

Haffner 16: A Young Moving Group in the MakingBased on observations obtained at the Gemini Observatory, which is operated by the Association of Universities for Research in Astronomy, Inc., under a cooperative agreement with the NSF on behalf of the Gemini partnership: the National Science Foundation (United States), the National Research Council (Canada), CONICYT (Chile), the Australian Research Council (Australia), Ministério da Ciência, Tecnologia e Inovação (Brazil), and Ministerio de Ciencia, Tecnología e Innovación Productiva (Argentina). TJ Davidge, Eleazar R Carrasco, Claudia Winge, Peter Pessev, Benoit Neichel, Fabrice Vidal, Francois Rigaut

Publications of the Astronomical Society of the Pacific 125.932 (2013) p. 1181. IOP Publishing, 2013

Adaptive Optics Observations

Olivier Lai, Eric Gendron' Daniel Rouan, François Rigaut

Science with the VLT Interferometer: Proceedings of the ESO Workshop Held at Garching, Germany, 18–21 June 1996 (2013) p. 119. Springer Science & Business Media, 2013

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François Rigaut

CR Physique 6 (2005). 2005

The VLT adaptive optics programme.

F Merkle, N Hubin, G Gehring, F Rigaut

The Messenger 65 (1991) pp. 13-14. 1991

Adaptive Optics Bonnette Arrives to CFHT

S McArthur, F Rigaut, R Arsenault

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GEMS: FROM THE ON-SKY EXPERIMENTAL SYSTEM TO SCIENCE OPERATION: THE AO POINT OF VIEW.

Fabrice Vidal, Benoit Neichel, Francois Rigaut, Rodrigo Carrasco, Claudia Winge, Peter Pessev, Andrew Serio, Gustavo Arriagada, Cristian Moreno, William Rambold

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GeMS first science results

Benoit Neichel, Fabrice Vidal, Francois Rigaut, Eleazar Rodrigo Carrasco, Gustavo Arriagada, Andrew Serio, Peter Pessev, Claudia Winge, Marcos Van Dam, Vincent Garrel arXiv preprint arXiv:1401.2009 (2014). 2014

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Benoit Neichel, François Rigaut, Fabrice Vidal, Marcos A Dam, Vincent Garrel, Eleazar Rodrigo Carrasco, Peter Pessev, Claudia Winge, Maxime Boccas, Céline d'Orgeville

Monthly Notices of the Royal Astronomical Society 440.2 (2014) pp. 1002-1019. Oxford University Press, 2014

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Orbital element generation for an optical and laser tracking object catalogue

JC Bennett, C Smith, B Greene, D Kucharski, F Rigaut, F Bennet, J Sang

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Ground based adaptive optic enhanced LIDAR for space environment management

Francis Bennet, Céline D'Orgeville, Yue Gao, William Gardhouse, Nicolas Paulin, Ian Price, Francois Rigaut, Ian Ritchie, Craig Smith, Kristina Uhlendorf

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Pascale Hibon, Vincent Garrel, Benoit Neichel, Benjamin Prout, Francois Rigaut, Alice Koning, Eleazar R Carrasco, German Gimeno, Peter Pessev

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Andres Guesalaga, Benoit Neichel, Francois Rigaut, James Osborn, Dani Guzman Applied optics 51.19 (2012) pp. 4520–4535. Optical Society of America, 2012

Further Spectro-Imagery results on Planetary Nebulae with BEAR

P Cox, J-P Maillard, F Rigaut

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Extragalactic Fields Optimized for Adaptive Optics

Ivana Damjanov, Roberto G Abraham, Karl Glazebrook, Peter McGregor, Francois Rigaut, Patrick J McCarthy, Jarle Brinchmann, Jean-Charles Cuillandre, Yannick Mellier, Henry Joy McCracken

Publications of the Astronomical Society of the Pacific 123.901 (2011) pp. 348-365. JSTOR, 2011

Gemini IR Detection of 1E 2259+ 586 Post-Burst

VM Kaspi, J Jensen, F Rigaut, A Hatakeyama, PM Woods

The Astronomer's Telegram 100 (2002) p. 1. 2002

First light for the Gemini Multi-Conjugate Adaptive Optics System

Benoit Neichel, Francois Rigaut

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Optical Identification of a New Einstein Cross & Discovery of the Deflecting Galaxy

F Hammer, F Rigaut

Bulletin d'information du telescope Canada-France-Hawaii 29 (1993) pp. 22-23. 1993

New year's eve with adaptive optics.

G Gehring, F Rigaut

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R Arsenault, D Salmon, F Rigaut, J Kerr

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R Arsenault, J Kerr, F Rigaut, D Salmon

Bulletin d'information du telescope Canada-France-Hawaii 30 (1994) pp. 7-11. 1994

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François Rigaut, Robert Blum, Tim Davidge, Angela Cotera

Astronomische Nachrichten 324.S1 (2003) pp. 309-313. Wiley Online Library, 2003

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Stephen O'Meara, Francois Rigaut

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Adaptive optics brings full sky into focus

Matt Mountain, François Rigaut

Physics World (2000) pp. 25-26. 2000

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The Astrophysical Journal Letters 545.2 (2008) p. L89. IOP Publishing, 2008

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TJ Davidge, KAG Olsen, R Blum, AW Stephens, F Rigaut

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Tim J Davidge, J Stoesz, F Rigaut, J-P Veran, G Herriot

Publications of the Astronomical Society of the Pacific 116.815 (2004) pp. 1-8. JSTOR, 2004

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TJ Davidge, F Rigaut

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