

Eduardo A. Bendek Ph.D.

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EXPERIENCE

More than 10 years of experience in the design, integration and operation of astronomical instrumentation for ground and space based telescopes. He is an expert in adaptive optics, wave front control and high-contrast imaging; he played a critical role on the world's first multi-laser adaptive optics demonstration.

2012- Present



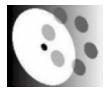
Principal Investigator (PI) /Optical designer, *NASA Ames Research Center*. Deputy PI and instrument lead for the ACESat NASA mission proposal to build space telescope direct imaging of exoplanets. PI of a NASA's exoplanet detection technology development laboratory funded by a SAT/TDEM NASA Grant.

2010 - 2012



Research Associate, *University of Arizona*. Development of a novel high-precision optical distortion calibration laboratory. Main application is exoplanet detection from space. Main responsibilities were to define science cases, opto-mechanical design, procurement, and integration of the laboratory.

2009 - 2012



Laser Safety Officer, *Multi Laser Adaptive Optics System MMT Observatory 6.5m Space Command and FAA regulations for high power outdoors laser operations*.
Systems Engineer, Supported the Ground Layer Adaptive Optics (GLAO) mode and developed algorithms to perform laser tomography (LTAO).

2003- 2008



Instrumentation Engineer, *European Southern Observatory*. Maintained and supported the astronomical instruments at the Very Large Telescope at Paranal Observatory. Tuned and maintained cryogenic opto-mechanisms, infrared detectors, and adaptive optics instruments. Responsible for several world-class infra-red camera and spectrograph, wide-field imagers and the Laser Guide Star Facility.

1999 - 2003



Founder and Co-director, Co-founded and managed a 40-employee electronics and telecommunications development company (currently *Yx Wireless*). Designed and developed telecommunications products. Served as the lead engineer for enclosure design, assembly and manufacturing. (www.yxwireless.com)

SKILLS

- **Optical engineering:** Advanced telescope design, aspheric off-axis systems, Vis and IR lens design. Optical tolerancing, wave front control, high-contrast imaging, diffractive optics systems.
- **Mechanical engineering:** Advanced opto-mechanical mount design for mirror and lenses, experience with composites material design.
- **Systems engineering:** Experience managing complex astronomical instruments.
- **Entrepreneurship and management:** Funder of a successful company, advisor for start-up incubators in California, Member of board of director for company in Chile.
- **Software and Programming skills:** ZEMAX, SolidWorks, C, Matlab, Labview.
- **Languages:** Native Spanish, fluent in English, basic French.

EDUCATION

2008 – 2012 **University of Arizona**, Ph.D. Optical Sciences.
2008 – 2010 **University of Arizona**, MS Optical Sciences.
2002 – 2004 **Pontificia Universidad Católica de Chile**, MS Mechanical Engineering.
Graduated with Maximum Distinction.
2002 **Pontificia Universidad Católica de Chile**, BS Mechanical Engineering Degree¹,
Graduated with Maximum Distinction, Astrophysics minor.
2001 **University of California Berkeley**, Exchange student in Mechanical Engineering.

¹ Degree recognized by ABET.

ADVISORY BOARDS AND ORGANIZATIONS

- NASA's Exoplanets Research Program (XRP) **panel reviewer** 2015.
- NASA's Exoplanet Exploration program **Chair SAG-12**, September 2014-Present.
- NASA NESSF-14 Proposals **reviewer**, NASA Headquarters, March 2014.
- SPIE Journal of Astronomical Telescopes, Instruments, and Systems (JATIS) **reviewer**, 2015
- Optical Society of America, Optics Express Journal **reviewer**, March 2014.
- **Councilor** for Chile-California Council, California, USA. Appointed on March 2013-Present
- **Advisor** for Astronomy and industry development, Ministry of Economy, Chile. 2013-2014
- FULBRIGHT SCIENCE & TECHNOLOGY **Worldwide Alumni representative**, 2013.
- Member of Optical Society of America (OSA).
- Member of the International Society for Optics and Photonics (SPIE)

DESIGN REVIEW PANELS (Only projects worth more than US\$ 10 Million listed)

- *Final Design Review (FDR) and Assembly, Integration and Verification (AIV) for HAWK-I*, a near infrared camera for the Very Large Telescope (VLT). Munich, Germany, 2005, Chile 2007.
- *Preliminary Design Review (PDR) and Final Design Review (FDR) for KMOS*, a near infrared multi-object spectrograph for the VLT. Edinburgh, Scotland 2006, Munich, Germany 2007.
- *Preliminary Design Review for GRAAL*, an adaptive optics module. Munich, Germany 2007.

RESEARCH GRANTS (Awarded)

- NASA 13-SAT, PI for \$741,099, Awarded August 2014.
- NASA 13-APRA, Co-I for \$721,203, Awarded October 2014.
- NASA CIF 2014, Co-I for \$50,000, Awarded October 2014.

AWARDS, SCHOLARSHIPS, AND PATENTS

- NASA Postdoctoral fellowship award, 2012.
- 1st Place Chile-California Council Ideas Contest: Project "*AstroSolar*", 2012
- Outstanding Graduate/Professional Student Leadership, University of Arizona, 2011.
- FULBRIGHT International Science and Technology PhD Scholarship, 2008.
- ECOS-CONICYT Master's Scholarship at Université De Technologie De Troyes, France, 2003.
- 2nd Place at the 3M Chile Technological Innovation Contest, 2002.
- Patent application US 61/930,476 "Dual purpose optical device for photovoltaic solar generation and astronomical observation" 2014.

PROJECTS

- **Coach a Teacher Fulbright Program.** *Fulbright S&T alumni association*, Creator, fundraiser and organizer of the program, 2013.
- **Optical Outreach Abroad Program.** *University of Arizona*, Creator, fundraiser and organizer of the program, 2011.
- **Astronomical Optics Workshop.** *University of Arizona – Pontificia Universidad Católica de Chile*. Creator, fundraiser and organizer of the workshop, 2011.
- **Founding Partner, Yx Ltda.** Electronics and telecommunications company (currently *Yx Wireless*), 1999-2003.
- **Chilean Commission for Nuclear Energy, Pontificia Universidad Católica.** Technical and economic evaluation of nuclear fuel cell production in Chile, 2000.

LICENSES AND CERTIFICATIONS

- Certified Laser Safety Officer: Laser Institute of America license #2950
- Private pilot license N°12965 issued by DGAC (Chile)

COURSES AND TRAINING

- **Adaptive Optics Summer School:** University of California, Santa Cruz, CA. USA, August 2006.
- **Optical Design with ZEMAX:** Brera Astronomical Observatory, Italy, February 2006.
- **Laser Safety Officer:** Laser Institute of America, Portland, OR. USA, September 2005.
- **Cryocooler Service:** Sumitomo Heavy Industries, Paranal Observatory, Chile, October 2005.
- **Practical Optical System Design:** SPIE astronomical telescopes. Glasgow, Scotland, June 2004.
- **Cryogenics and Vacuum Training:** Leybold GmbH. Paranal Observatory, Chile, December 2003.

PUBLICATIONS

Refereed papers

E. Bendek, O. Guyon, R. Belikov, "Fundamentals of Diffractive Pupil Design for precise metrology" In preparation. To be submitted at Applied Optics Journal. 2015.

S. Thomas, R. Belikov, **E. Bendek**, "Techniques for High Contrast Imaging in Multi-Star Systems I: Super-Nyquist Wavefront Control" submitted at ApJ, arXiv 1501.01583 2015.

E. Bendek, O. Guyon, S. M. Ammons, R. Belikov, "Laboratory demonstration of astrometric compensation using a diffractive pupil," PASP, Vol. 125, No. 932, pp. 1212-1225, 2013.

O. Guyon, J. Eisner, R. Angel, N. Woolf, **E. Bendek**, T. Milster, M. S. Ammons, M. Shao, S. Shacklan, M. Levine, B. Nemati, F. Martinache, J. Pitman, R. Woodruff, R. Belikov, "Simultaneous Exoplanet Characterization and Deep Field Wide Imaging with a Diffractive Pupil Telescope," ApJ, 767, 11. 2013

E. Bendek, R. Belikov, O. Guyon, E. Pluzhnik, "Laboratory demonstration of coronagraphic imaging with a diffractive pupil," PASP, 125, 924, 204-212, 2013.

O. Guyon, **E. Bendek**, J. Eisner, R. Angel, N. Woolf, T. Milster, M. S. Ammons, M. Shao, S. Shacklan, M. Levine, B. Nemati, J. Pitman, R. Woodruff, R. Belikov, "High precision astrometry with a diffractive pupil telescope," The Astrophysical Journal, 200:11 (22pp), 2012.

M. Hart, N. M. Milton, C. Baranec, K. Powell, T. Stalcup, D. McCarthy, C. Kulesa & **E. Bendek**, "A ground-layer adaptive optics system with multiple laser guide stars," Nature, 466, 727-729, 2010.

M. Kissler-Patig, J. F. Pirard, M. Casali, A. Moorwood, N. Ageorges, C. Alves de Oliveira, P. Baksai, L. R. Bedin, **E. Bendek**, P. Biereichel, B. Delabre, R. Dorn, R. Esteves, G. Finger, D. Gojak, G. Huster, Y. Jung, M. Kiekebush, B. Klein, F. Koch, J. L. Lizon, L. Mehrgan, M. Petr-Gotzens, J. Pritchard, F. Selman & J. Stegmeier, "HAWK-I: the high-acuity wide-field K-band imager for the ESO Very Large Telescope," Astronomy and Astrophysics, 491(3), 941-950. 2008.

E. Bendek, I. Lira, M. Francois & C. Vial, "Uncertainty of residual stresses measurement by layer removal," International Journal of Mechanical Sciences, 48(12), 1429-1438, 2006.

P. M. Garnavich, K. Z. Stanek, L. Wyrzykowski, L. Infante, **E. Bendek**, D. Bersier, S. T. Holland, S. Jha, T. Matheson, R. P. Kirshner, K. Krisciunas, M. M. Phillips & R. G. Carlberg, "Discovery of the low-redshift optical afterglow of GRB 011121 and its progenitor supernova SN 2001ke," The Astrophysical Journal, 582(2), 924-932, 2003.

Conference proceedings

Bendek, E., Belikov R., Lozi J., Thomas S., DeRosee R., Klupar P., "[Centaur: A scientific and technology pathfinder for direct imaging exoplanet missions](#)", 4th Interplanetary CubeSat Workshop. Imperial College, London, UK, May 2015.

Bendek, E., Belikov, R., Thomas, S., Lozi, J., "Space mission and instrument design to image the Habitable Zone of Alpha Centauri," AAS, 225, 311.02, 2015

Eduardo A. Bendek ; Ruslan Belikov ; Julien Lozi ; Glenn Schneider ; Sandrine Thomas ; Eugene Pluzhnik ; Dana Lynch; "Optomechanical design of the vacuum compatible EXCEDE's mission testbed," Proc. SPIE 9143, Space Telescopes and Instrumentation 2014: Optical, Infrared, and Millimeter Wave, 91435D, 2014

Sandrine J. Thomas ; **Eduardo Bendek** ; Ruslan Belikov; "Simulation of a method to directly image

exoplanets around multiple stars systems,” Proc. SPIE 9143, Space Telescopes and Instrumentation 2014: Optical, Infrared, and Millimeter Wave, 914335, 2014

Eduardo A. Bendek ; Michael Leatherbee ; Heather Smith ; Valentina Strappa ; Hans Zinnecker ; Mario Perez; Strategies for personnel sustainable lifecycle at astronomical observatories and local industry development,” Proc. SPIE 9149, Observatory Operations: Strategies, Processes, and Systems V, 91491L, 2014

Julien Lozi ; Ruslan Belikov ; Sandrine J. Thomas ; Eugene Pluzhnik ; **Eduardo Bendek** ; Olivier Guyon ; Glenn Schneider; “Experimental study of a low-order wavefront sensor for high-contrast coronagraphic imagers: results in air and in vacuum,” Proc. SPIE 9143, Space Telescopes and Instrumentation 2014: Optical, Infrared, and Millimeter Wave, 914322, 2014

Anne Marinan ; Kerri Cahoy ; Matthew Webber ; Ruslan Belikov ; **Eduardo Bendek**; “Payload characterization for CubeSat demonstration of MEMS deformable mirrors,” Proc. SPIE 9148, Adaptive Optics Systems IV, 91483Z , 2014

Ruslan Belikov ; Julien Lozi ; Eugene Pluzhnik ; Troy T. Hix ; **Eduardo Bendek** ; Sandrine J. Thomas ; Dana H. Lynch ; Roger Mihara ; J. Wes Irwin ; Alan L. Duncan ; Thomas P. Greene ; Olivier Guyon ; Richard L. Kendrick ; Eric H. Smith ; Fred C. Witteborn ; Glenn Schneider, “EXCEDE technology development III: first vacuum tests,” Proc. SPIE 9143, Space Telescopes and Instrumentation 2014: Optical, Infrared, and Millimeter Wave, 914323, 2014

S. M. Ammons ; Benoit Neichel ; Jessica Lu ; Donald T. Gavel ; Srikar Srinath ; Rosalie McGurk ; Alex Rudy ; Connie Rockosi ; Christian Marois ; Bruce Macintosh ; Dmitry Savransky ; Raphael Galicher ; **Eduardo Bendek** ; Olivier Guyon ; Eduardo Marin ; Vincent Garrel ; Gaetano Sivo; “A measurement of the systematic astrometric error in GeMS and the short-term astrometric precision in ShaneAO,” Proc. SPIE 9148, Adaptive Optics Systems IV, 91481J, 2014

Ammons, S.M., **Bendek, E.A.**, Guyon, O., Macintosh, B., Savransky, D., "Microarcsecond Astrometry with MCAO Using a Diffractive Mask", IAU Symposium, 293, 369-374, 2014

Bendek, E., Thomas, E., Belikov, R., “Direct Imaging of Exoplanets around Alpha Centauri and Other Multiple Star Systems,” Proc. 014ebi.conf.4.15B Search for Life Beyond the Solar System. Exoplanets, Biosignatures & Instruments, Tucson, AZ, March 2014

Bendek, E., Ennico, K., Rademacher, A., Lynch, D., Guyon, O., “Astrometry with small-size collapsible space telescope,” AAS, 223, 149.22, 2014

Ammons, Stephen; Macintosh, B.; Savransky, D.; Marois, C.; Neichel, B.; Guyon, O.; **Bendek, E.**, “On-Sky Tests of High Precision Astrometry and Implications for Exoplanet Mass Measurement,” AAS, 223, 229.04, 2014

Belikov, Ruslan; **Bendek, E.**; Davis, P.; Duncan, A.; Greene, T. P.; Guyon, O.; Hix, T.; Irwin, W.; Kendrick, R.; Lozi, J.; Lynch, D.; Mihara, R.; Pluzhnik, E.; Schneider, G.; Smith, E.; Thomas, S.; Witteborn, F. C., “Technology Demonstration Milestone #1 for the EXoplanetary Circumstellar Environments and Disk Explorer (EXCEDE) I. Laboratory/Experimental Results,” AAS, 223, 2014

R. Belikov, **E. Bendek**, T. Greene, O. Guyon, J. Lozi, D. Lynch, K. Newman, E. Pluzhnik, G. Schneider, D. Tenerelli, S. Thomas, F. Witteborn, “EXCEDE technology development II: demonstration of high contrast at $1.2\lambda/D$ and preliminary broadband results” Proc. SPIE Optics and Photonics, 8864, 2013.

E. Bendek, O. Guyon, R. Belikov, S. M. Ammons, T. Milster, Y. S. Kim, L. Johnson, “Exoplanet detection and characterization using combined coronagraphy and sub-UAS astrometry from space” Proc. SPIE Optics and Photonics, eds. S. Shaklan, 8864, 2013.

K. Cahoy, A. Marinan, B. Novak, C. Kerr, T. Nguyen, M. Webber, G. Falkenburg, A. Barg, K. Berry, A. Carlton, R. Belikov, **E. Bendek**, "MEMS deformable mirror CubeSat testbed" Proc. SPIE Optics and Photonics, eds. S. Shaklan, 8864, 2013.

Bendek, E., Belikov, R., Guyon, O., "Obtaining Sub-arcsecond Astrometry on a Wide-field, Coronagraph Equipped, Space Telescope Using a Diffractive Pupil," AAS, 221, 2013

Ammons, S., **Bendek, E.**, Macintosh, B., Guyon, O., "On-sky Tests of High-Precision Astrometry Using a Diffractive Mask," AAS, 221, 2013

Ammons, S.M., **Bendek, E.A.**, Guyon, O., Macintosh, B., Savransky, D., "Theoretical limits on bright star astrometry with multi-conjugate adaptive optics using a diffractive pupil," Proc. SPIE, 8447, 2012

E. Bendek, R. Belikov, E. Pluzhnik, G. Olivier, "High precision astrometry laboratory demonstration for exoplanet detection using a diffractive pupil telescope," Proc. SPIE Optics and Photonics, eds. M. Clampin, G. Fazio, H. MacEwen, J. Oschmann, 8442, 2012

Bendek, E., Guyon, O., Shao, M., Ammons, M., Shaklan, S., Belikov, R., Woodruff, R., "High precision astrometry with a Diffractive Pupil Telescope", AAS, 219, 2012

E. Bendek, M. Hart, K. Powell, V. Vaitheeswaran, D. McCarthy, C. Kulesa, "Latest GLAO results and advancements in laser tomography implementation at the 6.5m MMT telescope," Proc. SPIE Space Telescopes and Instrumentation, eds. R. Tyson, M. Hart, 8149, 07, 2011.

E. Bendek, M. Ammons, H. Shankar, O. Guyon, "Dynamic distortion calibration using a diffractive pupil: high precision astrometry laboratory demonstration for exoplanet detection," Proc. SPIE Space Telescopes and Instrumentation, eds. S. Shaklan, 8151, 0U, 2011.

M. Ammons, **E. Bendek**, O. Guyon, "Microarcsecond relative astrometry from the ground with a diffractive pupil," Proc. SPIE Space Telescopes and Instrumentation, eds. S. Shaklan, 8151, 0T, 2011.

O. Guyon, **E. Bendek**, M. Ammons, M. Shao, S. Shaklan, R. Woodruff, R. Belikov, "Diffractive pupil telescope for high precision space astrometry," Proc. SPIE Space Telescopes and Instrumentation, eds. S. Shaklan, 8151, 0S, 2011.

O. Guyon, M. Shao, S. Shaklan, M. Levine, M. Ammons, **E. Bendek**, R. Woodruff, B. Nemati & J. Pitman, "Single aperture imaging astrometry with a diffracting pupil: Application to exoplanet mass measurement with a small coronagraphic space telescope," Proc. SPIE Space Telescopes and Instrumentation, eds. M. Oschmann, M. C. Jacobus, Jr., M. Clampin & H. A. MacEwen, 7731, 2C, 2010.

M. Hart, M. Milton, K. Powell, C. Baranec, T. Stalcup, **E. Bendek**, D. McCarthy, & C. Kulesa, "Wide-field image compensation with multiple laser guide stars," Proc. AMOS Technologies Conference, ed. S. Ryan, E32, 2009.

M. Hart, M. Milton, K. Powell, C. Baranec, T. Stalcup, **E. Bendek**, D. McCarthy & C. Kulesa, "Wide-field astronomical image compensation with multiple laser-guided adaptive optics," Proc. SPIE Adaptive Coded Aperture Imaging, Non-Imaging, and Unconventional Imaging Sensor Systems, eds. S. Rogers, D. P. Casasent, J. J. Dolne, T. J. Karr & V. L. Gamiz, 7468, 2009.

C. Melo, M. Downing, P. Jorden, L. Pasquini, S. Deiries, A. Kelt, D. Naef, R. Hanuschik, R. Palsa, R. Castillo, E. Peña, **E. Bendek** & M. Gieles, "Detector upgrade for FLAMES: GIRAFFE gets red eyes," Proc. SPIE Ground-based and Airborne Instrumentation for Astronomy II, eds. I. S. McLean & M. Casali, 7014, 70143B, 2008.

M. Kissler-Patig, N. Ageorges, C. Alves de Oliveira, L. R. Bedin, **E. Bendek**, M. Casali, R. Dorn, R. Esteves, G. Finger, D. Gojak, Y. Jung, M. Kiekebusch, A. Moorwood, J. L. Lizon, M. Petr-Gotzens, J. F.

Pirard, J. Pritchard & F. Selman, "Performance of HAWK-I: the new high acuity wide-field K-band imager," Proc. SPIE Ground-based and Airborne Instrumentation for Astronomy II, eds. I. S. McLean & M. Casali, 7014, 70140Q, 2008.

M. Baffico, G. Avila, D. Baade, **E. Bendek**, C. Guirao, O. Gonzalez, P. Marchant, V. Salas, I. Toledo, S. Vasquez & L. Vanzi, "Observatorio UC at Santa Martina: A small observing facility operated by PUC," Proc. SPIE Ground-based and Airborne Telescopes II, eds. L. M. Stepp & R. Gilmozzi, 7012, 70122O, 2008.

E. Bendek, J. L. Alvarez & J. Parra, "LGSF operational problems management at La Silla Paranal Observatory," Proc. SPIE Adaptive Optics Systems, eds. N. Hubin, C. E. Max, P. L. Wizinowich, 7015, 70152U, 2008.

J. L. Alvarez, **E. Bendek**, J. Beltran, F. Gutierrez, I. Munoz, G. Valdes & N. Kornewibel, "Operation of Laser Guide Star Facility at La Silla Paranal Observatory," Proc. SPIE Adaptive Optics Systems, eds. N. Hubin, C. E. Max & P. L. Wizinowich, 7015, 70152O, 2008.

D. Bonaccini Calia, E. Allaert, J. L. Alvarez, C. Araujo Hauck, G. Avila, **E. Bendek**, B. Buzzoni, M. Comin, M. Cullum, R. Davies, M. Dimmler, I. Guidolin, W. Hackenberg, S. Hippler, S. Kellner, A. van Kesteren, F. Koch, U. Neumann, T. Ott, D. Popovic, F. Pedichini, M. Quattri, J. Quentin, S. Rabien, A. Silber & M. Tapia, "First light of the ESO laser guide star facility," Proc. SPIE Advances in Adaptive Optics II, eds. B. L. Ellerbroek & D. Bonaccini, 6272, 627207, 2006.

E. Bendek, M. Marchesi, F. Caruso, A. Smette, L. Vanzi & A. Kaufer, "Applications of system modeling for VLT instruments," Proc. SPIE Observatory Operations: Strategies, Processes, and Systems, eds. D. R. Silva & R. E. Doxsey, 6270, 62701A, 2006.

A. Kaufer, J. L. Alvarez, **E. Bendek**, F. Caruso, R. Castillo, J. Jimenez, G. Gillet, N. Haddad, A. Leiva, M. Marchesi, P. Mardones, M. Riquelme, P. Robert & U. Weilenmann, "VLT(I) instrument operations and maintenance at the Paranal Observatory," Proc. SPIE Observatory Operations: Strategies, Processes, and Systems, eds. D. R. Silva & R. E. Doxsey, 6270, 627009, 2006.

White papers

G. Schneider, J. Lozi, O. Guyon, R. Belikov, S. Thomas, **E. Bendek**, D. Lynch, P. Zell, F. Witterborn, T. Hix, A. Nordt, "**EXCEDE Technology Milestone #2**" Broadband Contrast Demonstration. JPL Document D-94365, November 2014.

E. Bendek, H. Zinnecker, SOFIA deployment in Chile: Easier access to the Southern Hemisphere sky. NASA Ames Research Center, Moffett Field, CA, 2014.

A. Dressler, D. Spergel, M. Mountain, M. Postman, E. Elliott, **E. Bendek**, J. Dalcanton, S. Gaudi, N. Gehrels, O. Guyon, C. Hirata, J. Kalirai, N. J. Kasdin, J. Kruk, B. Macintosh, S. Malhotra, M. Penny, S. Perlmutter, G. Rieke, A. Riess, J. Rhoads, S. Shaklan, D. Stern, R. Thompson, and D. Weinberg, "*Exploring the NRO Opportunity for a Hubble-sized wide-field near-IR space telescope – New **WFIRST***" New Telescope Meeting report, Princeton NJ, 2012.

G. Blackwood R. Akeson, **E. Bendek**, R. Belikov, D. Benford, A. Boss, J. Breckinridge, R. A. Brown, K. Cahoy, J. Catanzarite, D. Ciardi, W. Danchi, D. Ebbets, R. Egerman, S. Gaudi, T. Gautier, T. Glassman, T. Greene, O. Guyon, J. Harrington, S. Howell, L. Kaltenecker, S. Kane, J. Kasdin, J. Kasting, S. Kendrick, J. Krist, B. Lane, P. Lawson, M. Levine, J. Lissauer, R. Lyon, V. Makarov, M. Marley, S. Martin, V. Meadows, B. Mennesson, G. Orton, P. Plavchan, R. Polidan, A. Roberge, G. Schneider, E. Serabyn, M. Shao, C. Sotin, A. Sozzetti, D. Tenerelli, J. Trauger, Z. Tsvetanov, W. Traub, M. Turnbull, S. Unwin, "**ExO: The Exoplanet Observatory**"

O. Guyon, S.M. Ammons, R. Belikov, **E. Bendek**, E. Cady, A. Duncan, J. Eisner, T. Greene, B. Kern, M. Levine, J. Pitman, G. Rieke, G. Schneider, S. Shaklan, M. Shao, D. Tenerelli, R.A. Woodruff, "**The**

Exoplanetary Astrometric-Coronagraph Telescope

aCEND: Alpha Centauri Direct Imager. Exploring the nearest star system for habitable worlds. R. Belikov, E. Bendek. August 2014.

Other publications

E. Bendek, “Exoplanets Today: When the reality surpasses fiction”, *The Global Scientist*, 2013.

E. Bendek, “The University of Arizona’s Optics Outreach in Chile,” *OPN*, Vol 22, No. 12, 2011.

C. Melo, L. Pasquini, M. Downing, S. Deiries, D. Naef, R. Hanuschik, R. Palsa, R. Castillo, E. Peña, **E. Bendek**, & M. Gieles, “Detector Upgrade for FLAMES: GIRAFFE Gets Red Eyes,” *The Messenger*, 17-19, 2008.

H. U. Käufl, P. Amico, P. Ballester, **E. Bendek**, P. Biereichel, P. Bristow, M. Casali, B. Delabre, R. Dorn, S. Eschbaumer, R. Esteves, E. Fedrigo, G. Finger, G. Fischer, G. Gillet, D. Gojak, G. Huster, Y. Jung, F. Kerber, J. P. Kirchbauer, J. L. Lizon, E. Marchetti, L. Mehrgan, M. Meyer, A. Moorwood, S. Oberti, J. F. Pirard, J. Paufigue, E. Pozna, F. Primas, R. Schmutzer, A. Seifahrt, R. Siebenmorgen, A. Silber, A. Smette, B. Sokar, J. Stegmeier, L. Tacconi-Garman, S. Tordo, S. Uttenthaler & U. Weilenmann, “Good vibrations: Report from the commissioning of CRIRES,” *The Messenger*, 126, 32-36, 2006.

Selected talks and Seminars

“High Precision Imaging Astrometry for Detection and Characterization of Exoplanets with a Coronagraphic Telescope” **Invited talk, SPIE Optics and Photonics, San Diego, CA, 2013**

“Astrometry using a Diffractive Pupil, APRA Report”
NASA Headquarters. Washington DC, 2013.

“Obtaining Sub- μ s astrometry on a wide-field space telescope with a diffractive pupil”
New Telescope Meeting, Princeton University, NJ, 2012

“Entrepreneurship: How, why and when a start-up is a good plan”
Fulbright Science and Technology Capstone, Washington DC, 2013

“New Exoplanet Detection Technologies from Ground and Space”
Invited technical talk, First Astronomical Instrumentation workshop, Santiago, Chile, 2012