

CURRICULUM VITAE **John A. R. Caldwell**

PERSONAL

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EMPLOYMENT

2004- Resident Astronomer, McDonald Observatory
Fort Davis TX, USA
2002-2004 Researcher, Space Telescope Science Institute
Baltimore MD, USA
2001-2002 Guest Scientist, Max-Planck Institute for Astronomy
Heidelberg, Germany
1988-2001 Astronomer, South African Astronomical
Observatory, Cape Town, South Africa
1985-1987 Research Fellow, Mount Wilson & Las Campanas
Observatories, Pasadena CA, USA
1979-1985 Research Fellow, South African Astronomical
Observatory, Cape Town, South Africa

EDUCATION

1974-1979 Princeton University, Dept. of Astrophysical
Sciences, Princeton NJ USA, Ph.D. 1979
1970-1974 California Institute of Technology, Dept. of
Astronomy, Pasadena CA USA, B.S. 1974
language studies Afrikaans, French, German, Russian, Spanish

MEMBERSHIP

American Astronomical Society
International Astronomical Union
International Darksky Association

RESEARCH FOCUS

HST ACS WFC imaging survey projects - galaxy evolution
ESO/MPIA WFI imaging survey project - lensed quasars
Gravitational microlensing
Cepheid variable stars
Photometric standards and transformations

ASTRONOMY STUDENTS

- guided 1 McDonald REU student summer research project
- taught General Astronomy I Lab, Towson Univ., Towson MD
- guided 10 SAAO student summer research projects
- gave summer research student lectures
- taught introductory astronomy course, Union College, Cranford NJ

SCHOOL AND PUBLIC OUTREACH

- gave talks and conducted astronomical tours for students, pupils, and the public
- composed monthly illustrated press releases about the celestial sky and events
- organized the annual Sutherland Festival (Observatory open night weekend) for 6 years
- publicized the dark sky issue for the media and public, incl. popular articles, photography, civic meetings, talks; achieved a major reduction of light pollution (SA Astro.Obs.).
- had major responsibility for public, commercial, legal & official astronomical inquiries
- developed the website www.saa.ac.za/sky answering astronomy-related queries from a S. Hemis. perspective
- developed a lunar crescent visibility prediction website at www.saa.ac.za/sky/vishome.html and liaised with communities using lunar calendars
- was scientific organizer and presenter for an astronomical tour to the 1999 total solar eclipse in Turkey

TELESCOPE OPERATIONS

- resident astronomer at McDonald Observatory 9.2m HET telescope
- observed also at the Las Campanas, La Silla, Palomar, and Sutherland Obs
- facilitated numerous visiting observer programs as support astronomer and wrote extensive software to increase observing efficiency
- carried out wavefront curvature sensing for monitoring and improving the mechanical/optical behavior of 1.0m reflector
- managed the SAAO Sutherland Observatory 1.0m reflector
- managed the SAAO Sutherland Observatory 0.5m reflector

CONFERENCE ORGANIZING AND COORDINATING

- served on the local organizing committee for the following conferences, workshops:

2003 GEMS collaboration 2-day workshop at STScI
2000 Microlensing 2000: a New Era of Microlensing Astrophysics
1998 Science with SALT SALT/HET Workshop
1997 Annual Review of Southern African Astronomy and Astrophysics
1995 Astrophysical Applications of Stellar Pulsation, IAU Colloquium 155
1994 Annual Review of Southern African Astronomy and Astrophysics
1993 Annual Review of Southern African Astronomy and Astrophysics
1993 Precision Photometry: Conference in Honour of A W J Cousins
1992 Annual Review of Southern African Astronomy and Astrophysics (assistant)

PUBLICATIONS LIST: excluding abstracts, circulars, and the like

- (134) Gallazzi, A., Bell, E.F., Wolf, C., Gray, M.E., Papovich, C., Barden, M., Peng, C.Y., Meisenheimer, K., Heymans, C., van Kampen, E., Gilmour, R., Balogh, M., McIntosh, D.H., Bacon, D., Barazza, F.D., Böhm, A., CALDWELL, J.A.R., (+ 9 others), “Obscured Star Formation in Intermediate-Density Environments: A Spitzer Study of the Abell 901/902 Supercluster,” *ApJ* 690, 1883 **2009**.
- (133) Gray, M.E., Wolf, C., Barden, M., Peng, C.Y., Häußler, B., Bell, E.F., McIntosh, D.H., Guo, Y., CALDWELL, J.A.R., (+ 20 others), “STAGES: the Space Telescope A901/2 Galaxy Evolution Survey,” *MNRAS* 393, 1275 **2009**.
- (132) Jogee, S., Miller, S.H., Penner, K., Skelton, R.E., Conselice, C.J., Somerville, R.S., Bell, E.F., Zheng, X., Rix, H.-W., Robaina, A.R., Barazza, F.D., Barden, M., Borch, A., Beckwith, S.V.W., CALDWELL, J.A.R., (+ 10 others), “History of Galaxy Interactions and Their Impact on Star Formation Over the Last 7 Gyr from GEMS,” *ApJ* 697, 1971 **2009**.
- (131) Kains, N., Cassan, A., Horne, K., Albrow, M.D., Dieters, S., Fouqué, P., Greenhill, J., Udalski, A., Zub, M., Bennett, D.P., Dominik, M., Donatowicz, J., Kubas, D., Tsapras, Y., Anguita, T., Batista, V., Beaulieu, J.-P., Brilliant, S., Bode, M., Bramich, D.M., Burgdorf, M., CALDWELL, J.A.R., (+ 23 others), “A systematic fitting scheme for caustic-crossing microlensing events,” *MNRAS* 395, 787 **2009**.
- (130) Wolf, C., Aragón-Salamanca, A., Balogh, M., Barden, M., Bell, E.F., Gray, M.E., Peng, C.Y., Bacon, D., Barazza, F.D., Böhm, A., CALDWELL, J.A.R., (+ 14 others), “The STAGES View of Red Spirals and Dusty Red Galaxies: Mass-Dependent Quenching of Star Formation in Cluster Infall,” *MNRAS* 393, 1302 **2009**.
- (129) CALDWELL, J.A.R., (+ 16 others), “GEMS Survey Data and Catalog,” *ApJS* 174, 136 **2008**.
- (128) Heiderman, A., Jogee, S., Bacon, D., Balogh, M., Barden, M., Barazza, F.D., Bell, E.F.,

Böhm, A., CALDWELL, J.A.R., (+ 18 others), “Morphological Transformations of Galaxies in the A901/02 Supercluster from STAGES,” *New Horizons in Astronomy: Frank N. Bash Symposium: ASP Conf Ser* 393, 211 **2008**.

(127) Heiderman, A., Jogee, S., Bacon, D., Balogh, M., Barden, M., Barazza, F.D., Bell, E.F., Böhm, A., CALDWELL, J.A.R., (+ 17 others), “Galaxy Evolution in Dense Environments: Properties of Interacting Galaxies in the Abell 901/902 Supercluster,” *Formation and Evolution of Galaxy Disks: ASP Conf Ser* 396, 269 **2008**.

(126) Heymans, C., Gray, M.E., Peng, C.Y., van Waerbeke, L., Bell, E.F., Wolf, C., Bacon, D., Balogh, M., Barazza, F.D., Barden, M., Böhm, A., CALDWELL, J.A.R., (+ 12 others), “The Dark Matter Environment of the Abell 901/902 Supercluster: a Weak Lensing Analysis of the HST STAGES Survey,” *MNRAS* 385, 143 **2008**.

(125) Jogee, S., Miller, S., Penner, K., Bell, E.F., Conselice, C.J., Skelton, R.E., Somerville, R.S., Rix, H.-W., Barazza, F.D., Barden, M., Borch, A., Beckwith, S.V.W., CALDWELL, J.A.R., (+ 11 others), “Frequency and Impact of Galaxy Mergers and Interactions over the Last 7 Gyr,” *Formation and Evolution of Galaxy Disks: ASP Conf Ser* 396, 337 **2008**.

(124) Kubas, D., Cassan, A., Dominik, M., Bennett, D.P., Wambsganss, J., Brilliant, S., Beaulieu, J.P., Albrow, M.D., Batista, V., Bode, M., Bramich, D.M., Burgdorf, M., CALDWELL, J.A.R., (+ 27 others), “Limits on Additional Planetary Companions to OGLE 2005-BLG-390L,” *AAp* 483, 317 **2008**.

(123) Marinova, I., Jogee, S., Bacon, D., Balogh, M., Barden, M., Barazza, F.D., Bell, E.F., Böhm, A., CALDWELL, J.A.R., (+ 16 others), “Characterizing Barred Galaxies in the Abell 901/902 Supercluster from STAGES,” *New Horizons in Astronomy: Frank N. Bash Symposium: ASP Conf Ser* 393, 211 **2008**.

(122) Miller, S.H., Jogee, S., Conselice, C.J., Penner, K., Bell, E.F., Zheng, X., Papovich, C., Skelton, R., Somerville, R., Rix, H.-W., Barazza, F.D., Barden, M., Borch, A., Beckwith, S.V.W., CALDWELL, J.A.R., (+ 10 others), “Exploring the Impact of Galaxy Interactions over Seven Billion Years with CAS,” *New Horizons in Astronomy: Frank N. Bash Symposium: ASP Conf Ser* 393, 235 **2008**.

(121) Somerville, R.S., Barden, M., Rix, H.-W., Bell, E.F., Beckwith, S.V.W., Borch, A., CALDWELL, J.A.R., (+ 10 others), “An Explanation for the Observed Weak Size Evolution of Disk Galaxies,” *ApJ* 672, 776 **2008**.

(120) Beaulieu, J.P., Albrow, M.D., Bennett, D.P., Brilliant, S., CALDWELL, J.A.R., (+ 37 others), “Hunting for Frozen Super-Earths via Microlensing,” *The Messenger* 128, 33 **2007**.

(119) Häußler, B., McIntosh, D.H., Barden, M., Bell, E.F., Rix, H.-W., Borch, A., Beckwith, S.V.W., CALDWELL, J.A.R., (+ 10 others), “GEMS: Galaxy Fitting Catalogs and Testing Parametric Galaxy Fitting Codes: GALFIT and GIM2D,” *ApJS* 172, 615 **2007**.

(118) Häußler, B., Bell, E.F., Barden, M., McIntosh, D.H., Rix, H.-W., Borch, A., Beckwith, S.V.W., CALDWELL, J.A.R., (+ 10 others), “GEMS: The Destiny of Blue Spheroidal Galaxies,” *Galaxy Evolution across the Hubble Time: IAU Symp.* 235, 102 **2007**.

- (117) Laney, C.D., and CALDWELL, J.A.R., “The Reliability of Cepheid Reddenings Based on BVI_C Photometry,” *MNRAS* 377, 147 **2007**.
- (116) Rowe, B., Bacon, D., Heymans, C., Taylor, A., Massey, R., Barden, M., CALDWELL J.A.R., “New Constraints on Dark Matter Substructure from Weak Gravitational Flexion,” *Cosmic Frontiers: ASP Conf Ser* 379, 338 **2007**.
- (115) Trujillo, I., Förster Schreiber N.M., Rudnick, G., Barden, M., Franx, M., Rix, H.-W., CALDWELL, J.A.R., (+ 10 others), “Size Evolution of Galaxies since $z \sim 3$: Combining SDSS, GEMS and FIRES,” *Island Universes: Astrophysics and Space Science Proceedings*, Springer, p.481 **2007**.
- (114) Barazza, F.D., Jogee, S., Rix, H.-W., Barden, M., Bell, E.F., CALDWELL, J.A.R., McIntosh, D.H., Meisenheimer, K., Peng, C.Y., Wolf, C., “Studying Distant Dwarf Galaxies with GEMS and SDSS,” *New Horizons in Astronomy: Frank N. Bash Symposium: ASP Conf Ser* 352, 225 **2006**.
- (113) Barazza, F.D., Jogee, S., Rix, H.-W., Barden, M., Bell, E.F., CALDWELL, J.A.R., McIntosh, D.H., Meisenheimer, K., Peng, C.Y., Wolf, C., “Color, Structure, and Star Formation History of Dwarf Galaxies over the Last ~ 3 Gyr with GEMS and SDSS,” *ApJ* 643, 162 **2006**.
- (112) Beaulieu, J.P., Bennett, D.P., Fouqué, P., Williams, A., Dominik, M., Jørgensen, U.G., Kubas, D., Cassan, A., Coutures, C., Greenhill, J., Hill, K., Menzies, J.W., Sackett, P.D., Albrow, M.D., Brillant, S., CALDWELL, J.A.R., (+ 57 others), “Discovery of a Cool Planet of 5.5 Earth Masses through Gravitational Microlensing,” *Nature* 439, 437 **2006**.
- (111) Beckwith, S.V.W., Stiavelli, M., Koekemoer, A.M., CALDWELL, J.A.R., (+ 10 others), “The Hubble Ultra Deep Field,” *AJ* 132, 1729 **2006**.
- (110) Bell, E.F., Naab, T., McIntosh, D.H., Somerville, R.S., CALDWELL, J.A.R., (+ 14 others), “Dry Mergers in GEMS: the Dynamical Evolution of Massive Early-Type Galaxies,” *ApJ* 640, 241 **2006**.
- (109) Cassan, A., Beaulieu, J.-P., Fouqué, P., Brillant, S., Dominik, M., Greenhill, J., Heyrovský, D., Horne, K., Jørgensen, U.G., Kubas, D., Stempels, H.C., Vinter, C., Albrow, M.D., Bennetti, D., CALDWELL, J.A.R., (+ 25 others), “OGLE 2004-BLG-254: a K3 III Galactic Bulge Giant Spatially Resolved by a Single Microlens,” *AAp* 460, 277 **2006**.
- (108) Heymans, C., Bell, E.F., Rix, H.-W., Barden, M., Borch, A., CALDWELL, J.A.R., (+ 11 others), “A Weak Lensing Estimate from GEMS of the Virial to Stellar Mass Ratio in Massive Galaxies to $z \sim 0.8$,” *MNRAS* 371, 60 **2006**.
- (107) Trujillo, I., Förster Schreiber N.M., Rudnick, G., Barden, M., Franx, M., Rix, H.-W., CALDWELL, J.A.R., (+ 11 others), “Size Evolution of Galaxies since $z \sim 3$: Combining SDSS, GEMS and FIRES,” *ApJ* 650, 18 **2006**.
- (106) Barden, M., Rix, H.-W., Somerville, R.S., Bell, E.F., Häußler, B., Peng, C.Y., Borch, A., Beckwith, S.V.W., CALDWELL, J.A.R., (+ 8 others), “GEMS: The Surface Brightness and Surface Mass Density Evolution of Disk Galaxies,” *ApJ* 635, 959 **2005**.

- (105) Beaulieu, J.-P., Cassan, A., Kubas, D., Albrow, M.D., Bennett, D.P., Brillant, S., CALDWELL, J.A.R., (+ 21 others), “PLANET III: Searching for Earth-mass Planets via Microlensing from Dome C?” *EAS Publications Series* 14, 297 **2005**.
- (104) Bell, E.F., Papovich, C., Wolf, C., Le Floc’h, E., CALDWELL, J.A.R., (+ 9 others), “Towards and Understanding of the Rapid Decline of the Cosmic Star Formation Rate,” *ApJ* 625, 23 **2005**.
- (103) Heymans, C., Brown, M.L., Barden, M., CALDWELL, J.A.R., (+ 15 others), “Cosmological Weak Lensing with the HST GEMS Survey,” *MNRAS* 361, 160 **2005**.
- (102) Heymans, C., Brown, M.L., Barden, M., CALDWELL, J.A.R., (+ 15 others), “Weak Lensing Results from GEMS,” *Gravitational Lensing Impact on Cosmology: IAU Symp.* 225, 43 **2005**.
- (101) Heymans, C., Brown, M.L., Barden, M., CALDWELL, J.A.R., (+ 15 others), “Weak Lensing Studies from Space with GEMS,” *New Astronomy Rev* 49, 392 **2005**.
- (100) Kubas, D., Cassan, A., Beaulieu, J.-P., Coutures, C., Dominik, M., Albrow, M.D., Brillant, S., CALDWELL, J.A.R., (+ 20 others), “Full Characterization of Binary-Lens Event OGLE-2002-BLG-069 from PLANET Observations,” *AAp* 435, 941 **2005**.
- (99) McIntosh, D.H., Bell, E.F., Rix, H.-W., Wolf, C., Heymans, C., Peng, C.Y., Somerville, R.S., Barden, M., Beckwith, S.V.W., Borch, A., CALDWELL, J.A.R., Häußler, B., Jahnke, K., Joglee, S., Meisenheimer, K., Sánchez, S.F., Wisotzki, L., “The Evolution of Early-Type Red Galaxies with the GEMS Survey: Luminosity-Size and Stellar Mass-Size Relations Since $z=1$,” *ApJ* 632, 191 **2005**.
- (98) Wisotzki, L., Jahnke, K., Sánchez, S.F., Wolf, C., Barden, M., Bell, E.F., Borch, A., Häußler, B., Meisenheimer, K., Rix, H.-W., Beckwith, S.V.W., CALDWELL, J.A.R., Joglee, S., Somerville, R.S., McIntosh, D.H., and Peng, C.Y., “Evolution of Optically Faint AGN from the COMBO-17 and GEMS,” *Multiwavelength AGN Surveys* World Sci Publ Co. ISBN 981-256-049-1 **2005**.
- (97) Wolf, C., Bell, E.F., McIntosh, D.H., Rix, H.-W., Barden, M., Beckwith, S.V.W., Borch, A., CALDWELL, J.A.R., (+ 9 others), “GEMS: Which Galaxies Dominate the $z \sim 0.7$ Ultraviolet Luminosity Density?” *ApJ* 630, 771 **2005**.
- (96) Beckwith, S.V.W., Rix, H.-W., Bell, E.F., CALDWELL, J.A.R., Borch, A., McIntosh, D.H., Meisenheimer, K., Peng, C.Y., Wisotzki, L., Wolf, C., “Galaxy Evolution from Morphology and SEDs: GEMS,” *Dark Matter in Galaxies: IAU Symp.* 220, 99 **2004**.
- (95) Bell, E.F., McIntosh, D.H., Barden, M., Wolf, C., CALDWELL, J.A.R., (+ 11 others), “GEMS Imaging of Red Sequence Galaxies at $z \sim 0.7$: Dusty or Old?” *ApJL* 600, L11 **2004**.
- (94) Cassan, A., Beaulieu, J.-P., Brillant, S., Coutures, C., Dominik, M., Donatowicz, J., Jørgensen, U.G., Kubas, D., Albrow, M.D., CALDWELL, J.A.R., (+ 18 others), “Probing the Atmosphere of the Bulge G5III Star OGLE-2002-BUL-069 by Analysis of Microlensed $H\alpha$ Line,” *AAp* 419, L1 **2004**.

- (93) Dominik, M., Albrow, M.D., Beaulieu, J.-P., CALDWELL, J.A.R., (+ 16 others), “The PLANET Microlensing Campaign: Implications for Planets around Galactic Disk and Bulge Stars,” *Extrasolar Planets Today and Tomorrow: ASP Conf Ser* 321, 121 **2004**.
- (92) Ghosh, H., Gould, A., DePoy, (+ 60 others ...CALDWELL, J.A.R...), “Potential Direct Single-Star Mass Measurement,” *ApJ* 615, 450 **2004**.
- (91) Jahnke, K., Sánchez, S.F., Wisotzki, L., Barden, Beckwith, S.V.W., Bell, E.F., Borch, A., CALDWELL, J.A.R., (+ 8 others), “UV Light from Young Stars in GEMS Quasar Host Galaxies at $1.8 < z < 2.75$,” *ApJ* 614, 568 **2004**.
- (90) Jiang, G., DePoy, D.L., Gal-Yam, A., Gaudi, B.S., Gould, A., Han, C., Lipkin, Y., Maoz, D., Ofek, E.O., Park, B.-G., Pogge, R.W., Udalski, A., Kubiak, M., Szymanski, M.K., Szweczyk, O., Zebrun, K., Wyrzykowski, L., Soszynski, I., Pietrzynski, G., Albrow, M.D., Beaulieu, J.-P., CALDWELL, J.A.R., (+ 19 others), “OGLE-2003-BLG-238: Microlensing Mass Estimate of an Isolated Star,” *ApJ* 617, 1307 **2004**.
- (89) Joglee, S., Barazza, F.D., Rix, H.-W., Shlosman, I., Barden, M., Wolf, C., Davies, J., Heyer, I., Beckwith, S.V.W., Bell, E.F., Borch, A., CALDWELL, J.A.R., (+ 16 others), “Bar Evolution over the Last 8 Billion Years: a Constant Fraction of Strong Bars in the GEMS Survey,” *ApJ* 615, L105 **2004**.
- (88) Koch, A., Grebel, E.K., Odenkirchen, M., Martínez-Delgado, D., and CALDWELL, J.A.R., “Mass Segregation in the Globular Cluster Palomar 5 and Its Tidal Tails,” *AJ* 128, 2274 **2004**.
- (87) Koch, A., Grebel, E.K., Odenkirchen, M., and CALDWELL, J.A.R., “Correcting Spatial Gradients: the Case of Wide Field Imager Photometry,” *The Messenger* 115, 37 **2004**.
- (86) Koch, A., Odenkirchen, M., Grebel, E.K., and CALDWELL, J.A.R., “A Calibration Map for Wide Field Imager Photometry,” *Astronomische Nachrichten* 325, 299 **2004**.
- (85) Koch, A., Odenkirchen, M., Grebel, E.K., Martínez-Delgado, D., and CALDWELL, J.A.R., “The Luminosity Function of Palomar 5 and Its Tidal Tails,” *Satellites and Tidal Streams: ASP Conf Ser* 327, 333 **2004**.
- (84) Morgan, N.D., CALDWELL, J.A.R., Dressler, A., Egami, E., Rix, H.-W., and Schechter, P.L., “WFI J2026-4536 and WFI J2033-4723: Two New Quadruple Gravitational Lenses,” *AJ* 127, 2617 **2004**.
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(76) Gaudi, B.S., Albrow, M.D., An, J., Beaulieu, J.-P., CALDWELL, J.A.R., (+ 18 others), “Microlensing Constraints on the Frequency of Jupiter-Mass Companions: Analysis of Five Years of PLANET Photometry,” *ApJ* 566, 463 **2002**.

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