

Matthew A. Taylor

2401 Barbara Rd., Courtenay, British Columbia, Canada V9J 1L9
 +1 250 218 9221 | mtaylor@astro.puc.cl
www.astro.puc.cl/~mtaylor | github.com/mataylor5128

EDUCATION

July 2016	Pontificia Universidad Católica de Chile <i>PhD in Astrophysics</i> Distinción Maxima Dissertation: The Global Globular Cluster System of the Nearby Giant Elliptical Galaxy NGC5128 Advisors: Dr. Thomas H. Puzia, Dr. Steffen Mieske	Santiago, Chile
June 2011	University of Victoria <i>Bachelor of Science in Physics and Astronomy</i> Co-operative Education Distinction	Victoria, Canada

SKILLS

Languages	English: mother tongue; Spanish: intermediate
Programming	Python, IDL, R, Java, Maple
Software	IRAF, ds9, Source Extractor, SCAMP SWARP, PSFEx, Supermongo, MESA, standard office software
Platforms:	Linux (various), Mac OSX, Windows

RESEARCH EXPERIENCE

2013-2014	Graduate Term Research Project <i>Pontificia Universidad Católica de Chile</i> Stellar parameter and iron abundance estimates of red giant branch and red clump stars from VLT/FLAMES spectra. Supervisor: Dr. Manuela Zoccali	Santiago, Chile
2012-2014	Graduate Term Research Project <i>Pontificia Universidad Católica de Chile</i> Internal kinematics and dynamical mass estimates of extragalactic globular clusters from VLT/FLAMES integrated light spectra. Supervisors: Dr. Thomas H. Puzia and Dr. Matias Gomez	Santiago, Chile
2011	Research Assistant <i>University of Victoria</i> Spectral energy distribution fitting for large catalogues of galaxies from SDSS and CFHT photometry. Supervisor: Dr. Chris Pritchett	Victoria, Canada
2010	Co-operative Education Work Term <i>University of Victoria</i> Population estimate of Kuiper Belt objects via statistical simulations of observations	Victoria, Canada

	conducted by the CFHT. Supervisor: Dr. J.J. Kavelaars	
2009	Undergraduate Directed Studies <i>University of Victoria</i> Complex modeling of very metal-poor, intermediate mass stars during thermal pulse asymptotic giant branch evolution. Supervisor: Dr. Falk Herwig	Victoria, Canada
2008-2009	Co-operative Education Work Term <i>Herzberg Institute for Astrophysics</i> Dynamical and chemical analyses of massive extragalactic compact stellar systems from high-resolution VLT/UVES integrated light spectra. Supervisor: Dr. Thomas H. Puzia	Victoria, Canada

ACCEPTED PI OBSERVING PROGRAMS

2016A	"Redder is Better: The Survey of Centaurus A's Baryonic Structures - Near-Infrared Supplement" (<i>37.5 hours awarded on VISTA/VIRCam</i>) Direct, wide-field, near-infrared photometry of NGC 5128 in J, and K _S filters. <i>Prog. ID: 097.B-0603</i>	ESO OPC
2015A	"The Dark Side of NGC 5128's Globular Cluster System" (<i>13.2 hours awarded on VLT/XSHOOTER</i>) High-resolution spectroscopy of dark star clusters around NGC 5128. <i>Prog. ID: 095.B-0492</i>	ESO OPC
2013/2014B	"Compact Stellar Systems in Hickson Compact Groups: A MultiBand Photometric Survey for their Origins" (<i>36.5 hours awarded on VLT/HAWK-I+VIMOS</i>) Direct photometry of Hickson Compact Group 90 in U, I, and K _S filters. Prog. IDs: 092.B-0476; 094.B-0366	ESO OPC
2014A	"Nowhere Left to Hide: SCABS, The Survey of Centaurus A's Baryonic Structures" (<i>2 nights awarded on Blanco/DECam</i>) Direct, wide-field photometry of NGC 5128 in u', g', r', i', and z' filters. Prog. ID: CN2014A-92	Chilean National TAC

OBSERVING EXPERIENCE

Aug. 2015	"Near-UV Spectroscopy of Galactic Globular Clusters: Probing the Self-Enrichment Scenario" <i>2 nights on SOAR/Goodman Spectrograph</i> Drift-scan spectroscopy of Milky Way globular clusters. <i>Prog. ID: CN2015B-96 (PI: Thomas H. Puzia)</i>	Cerro Pachón
Feb. 2015	"Mapping the Radial Distribution of the Unusual Globular Cluster System of NGC 4365" <i>0.5 night on Magellan (Baade)/Fourstar Imager</i> Near infrared (K _S -band) imaging of the giant elliptical galaxy NGC 4365. <i>Prog. ID: CN2015A-120 (PI: Maren Hempel)</i>	Las Campanas
Apr. 2014	"SCABS: The Survey of Centaurus A's Baryonic Structures" <i>2 nights on Blanco/DECam</i>	Cerro Tololo

Deep, multi-band survey of nearby giant elliptical galaxy NGC 5128 (Centaurus A).
Prog. ID: CN2014A-92 (PI: Matthew A. Taylor)

Oct. 2013 **"Chemodynamical Characterization of Blue Straggler Stars in Galactic Globular Clusters"** Cerro Paranal
3 nights on VLT/FLAMES
 Spectroscopy of blue straggler stars in Milky Way globular clusters.
Prog. ID: 092.D-0477 (PI: Mirko Simunovic)

PUBLICATIONS

Conference Proceedings

2015 **NGC 5128's Globular Cluster System: Is there a dark side?**
Taylor, M.A., Puzia, T.H., Gomez, M., and Woodley, K.A., 2015, in IAU Symp. 309
Galaxies in 3D Across the Universe, ed. Ziegler, B.L., Combes, F., Dannerbauer, H., & Verdugo, M., (Cambridge, UK: Cambridge Univ. Press), pp. 348

2011 **The Scattered Disk and Hot Belt, Two Sides of the Same Coin?**
 Kavelaars, J.J., Petit, J.-M., Gladman, B., Jones, R.L., Parker, J., & **Taylor, M.**, 2011, in EPSC-DPS Joint Meeting 2011, pp. 1318

Peer Reviewed Journal Articles

(Four first-author papers with 43 citations; five co-author papers with 116 citations)

2016 **Faint Dwarf Galaxies in Hickson Compact Group 90**
 Ordenes-Briceño Y., **Taylor, M.A.**, Puzia, T.H., Muñoz, R.P., Eigenthaler, P., Georgiev, I.Y., Goudfrooij, P., Hilker, M., Lançon, A., Mamon, G., Mieske, S., Miller, B., Peng, E.W., and Sánchez-Janssen, R., *Monthly Notices of the Royal Astronomical Society*, vol. 463, no. 2, 2016, pp. 1284-1290

2016 **The Lost Dwarfs of Centaurus A and the Formation of its Dark Globular Clusters**
 Mia Sauda Bovill, Puzia T.H., Ricotti, M., and **Taylor, M.A.**, *The Astrophysical Journal*, vol. 832, no. 1, 2016, pp. 88-99

2016 **The Survey of Centaurus A's Baryonic Structures (SCABS). II. The Extended Globular Cluster System of NGC5128 and its Nearby Environment**
Taylor, M.A., Puzia, T.H., Muñoz, R.P., Mieske, S., Eigenthaler, P., and Bovill, M.S., *Monthly Notices of the Royal Astronomical Society*, submitted (*ID: MN-16-2920-MJ*), *positive referee report received, arXiv:1608:07288*

2016 **The Survey of Centaurus A's Baryonic Structures (SCABS). I. Survey Description and Initial Source Catalogues**
Taylor, M.A., Muñoz, R.P., Puzia, T.H., Mieske, S., Zhang, H., Eigenthaler, P., and Bovill, M.S., *Monthly Notices of the Royal Astronomical Society*, submitted (*ID: MN-16-2919-MJ*), *positive referee report received, arXiv:1608:07285*

2015 **Unveiling a Rich System of Faint Dwarf Galaxies in the Next Generation Fornax Survey**
 Muñoz, R.P., Eigenthaler, P., Puzia, T.H., **Taylor, M.A.**, Ordenes-Briceño, Y., Alamo-Martínez, K., Ribbeck, K.X., Ángel, S., Capaccioli, M., Côté, P., Ferrarese, L., Galaz, G., Hempel, M., Hilker, M., Jordán, A., Lançon, A., Mieske, S., Paolillo, M., Richtler, T., Sánchez-Janssen, R., and Zhang, H., *The Astrophysical Journal Letters*, vol. 813, no. 1, 2015, pp. 15-21

2015 **Observational Evidence for a Dark Side to NGC 5128's Globular Cluster System**
Taylor, M.A., Puzia, T.P., Gomez, M., and Woodley, K.A., *The Astrophysical Journal*,

2014 vol. 805, no. 1, 2015, pp. 65-85
The Next Generation Virgo Survey-Infrared (NGVS-IR). I. A New Near-Ultraviolet, Optical, and Near-Infrared Globular Cluster Selection Tool
 Muñoz, R.P., Puzia, T.H., Lançon, A., Peng, E.W., Côté, P., Ferrarese, L., Blakeslee, J.P., Mei, S., Cuillandre, J.-C., Hudelot, P., Courteau, S., Duc, P.-A., Balogh, M.L., Boselli, A., Bournaud, F., Carlberg, R.G., Chapman, S.C., Durrell, P., Eigenthaler, P., Emsellem, E., Gavazzi, G., Gwyn, S., Huertas-Company, M., Ilbert, O., Jordán, A., Lásker, R., Licitra, R., Liu, C., MacArthur, L., McConnachie, A., McCracken, H.J., Mellier, Y., Peng, C.Y., Raichoor, A., **Taylor, M.A.**, Tonry, J.L., Tully, B.R., and Zhang, H., *The Astrophysical Journal Supplement*, vol. 210, no. 1, 2014, pp. 4-27

2011 **The Canada-France Ecliptic Plane Survey -- Full Data Release: The Orbital Structure of the Kuiper Belt**
 Petit, J.-M., Kavelaars, J.J., Gladman, B.J., Jones, R.L., Parker, J. Wm., Van Laerhoven, C., Nicholson, P., Mars, G., Rousselot, P., Mousis, O., Marsden, B., Bieryla, A., **Taylor, M.**, Ashby, M.L.N., Benavidez, P., Campo Bagatin, A., and Bernabeu, G., *The Astronomical Journal*, vol. 142, no. 4, article id. 131, 2011, pp. 24

2010 **Chemodynamics of Compact Stellar Systems in NGC 5128: How similar are globular clusters, ultra-compact dwarfs, and dwarf galaxies?**
Taylor, M.A., Puzia, T.H., Harris, W.E., Harris, G.L.H., Kissler-Patig, M., and Hilker, M., *The Astrophysical Journal*, vol. 712, no. 2, 2010, pp. 1191-1208

HONOURS AND AWARDS

2014–2016	Student Fellowship <i>European Southern Observatory</i>	Santiago, Chile
2014–2015	Instructor Becario Senior Doctoral Scholarship <i>Pontificia Universidad Católica de Chile</i>	Santiago, Chile
2013–2014	Ayudante Becario Junior Doctoral Scholarship <i>Pontificia Universidad Católica de Chile</i>	Santiago, Chile
2012–2013	Beca de Excelencia para Alumnos Extranjeros Foreign Doctoral Student Scholarship <i>Pontificia Universidad Católica de Chile</i>	Santiago, Chile
2011	NSERC-USRA National Research Council of Canada Undergraduate Student Research Award <i>University of Victoria</i>	Victoria, Canada
2009	University of Victoria Physics/Astronomy Co-operative Education Award: Best Co-op Work Term Report <i>University of Victoria</i>	Victoria, Canada
2008	University of Victoria Physics/Astronomy Co-operative Education Award: Best Co-op Work Term Report <i>University of Victoria</i>	Victoria, Canada

SCIENCE ACTIVITIES AND OUTREACH

Dec. 2016 **Preparing TMT Future Leaders Workshop** Hilo, USA
 Four-day workshop to prepare early career researchers for future operations with the Thirty Metre Telescope.

July 2016	ESO Thirty Minute Talk	Santiago, Chile
	Thirty minute formal talk given at the European Southern Observatory offices entitled "The Extended Globular Cluster System of NGC5128".	
2014–2016	Student Science Coffee Contributions	Santiago, Chile
	Provided summaries of talks given by speakers visiting the European Southern Observatory offices for colleagues unable to attend, and recaps of recent astronomy and/or general science related news.	
Apr. 2016	Astrostatistics Using R Workshop	Santiago, Chile
	Attended weeklong tutorial by Dr. Eric Feigelson on astrostatistics applications using the R programming language.	
Sept. 2015	Proposal Writing Workshop	Santiago, Chile
	Took part in a workshop on effective observing proposal writing, including a mock Time Allocation Committee exercise.	
Sept. 2015	Python Plotting Tutorial	Santiago, Chile
	Gave an introduction to Python-based plotting package <i>matplotlib</i> to ESO colleagues covering basic to advanced data visualization techniques.	
June 2015	ESO Thirty Minute Talk	Santiago, Chile
	Thirty minute formal talk given at the European Southern Observatory offices entitled "Observational Evidence for a Dark Side to Centaurus A's Globular Cluster System".	
Apr. 2015	Conference Local Organizing Committee	Santiago, Chile
	Participated in local organizing committee duties for the <i>Satellites and Streams in Santiago</i> meeting held 13–17 April 2015.	
2009–2010	University of Victoria Astronomy Open House	Victoria, Canada
	Assisted in UVic's Department of Physics and Astronomy weekly open house. Duties included giving tours of the university telescopes, guided star-gazing, and answering questions from visitors.	

CONFERENCE CONTRIBUTIONS AND INVITED TALKS

(2 invited talks; 3 contributed talks; 6 contributed posters)

Sept. 2016	The Extended Globular Cluster System of NGC5128 and its Nearby Environment	Invited talk: University of Victoria, Victoria, Canada, 22 Sept. 2016.
Sept. 2016	The Extended Globular Cluster System of NGC5128 and its Nearby Environment	Invited talk: Herzberg Institute of Astrophysics, Victoria, Canada, 13 Sept. 2016.
Aug. 2015	Evidence for a Dark Side to NGC 5128's Globular Cluster System	Contributed poster: <i>IAUS316: Formation, Evolution, and Survival of Massive Star Clusters</i> , Honolulu, USA, 11–14 Aug. 2015.
Aug. 2015	SCABS: The Survey of Centaurus A's Baryonic Structures	Contributed poster: <i>IAUS317: The General Assembly of Galaxy Halos: Structure, Origin and Evolution</i> , Honolulu, USA, 3–7 Aug. 2015.
May 2015	SCABS: The Survey of Centaurus A's Baryonic Structures	Contributed talk: <i>Multiwavelength Dissection of Galaxies</i> , Sydney, Australia, 24–29 May 2015.
Apr. 2015	SCABS: The Survey of Centaurus A's Baryonic Structures	Contributed poster: <i>Satellites and Streams in Santiago</i> , Santiago, Chile, 13–17 Apr. 2015.

Mar. 2015	Observational Evidence for a Dark Side to Centaurus A's Globular Cluster System Contributed talk : <i>Modelling and Observing Dense Stellar Systems 15</i> , Concepción, Chile, 2–6 Mar. 2015.
Jul. 2014	Discovering the Dark Side of Centaurus A's Globular Cluster System Contributed poster : <i>IAUS311: Galaxy Masses as Constraints of Formation Models</i> , Oxford, United Kingdom, 21–25 July 2014.
Jul. 2014	Discovering the Dark Side of Centaurus A's Globular Cluster System Contributed poster : <i>IAUS309: Galaxies in 3D Across the Universe</i> , Vienna, Austria, 7–11 July 2014.
Jul. 2014	Discovering the Dark Side of Centaurus A's Globular Cluster System Contributed poster : <i>Nuclear Clusters in Galaxies, and the Role of the Environment</i> , Leiden, The Netherlands, 30 June–4 July 2014.
May 2014	Observational Evidence for a Bifurcation in the Dynamical Mass Scaling Relations of Compact Stellar Systems in NGC 5128 Contributed talk : <i>Formation and Evolution of Star Clusters</i> , Santiago, Chile, 14–16 May 2014.

INTERESTS

Professional: data analysis, data visualization, galaxy evolution, globular cluster systems, massive compact stellar systems, observations, software development, stellar populations

Personal: cooking (professionally trained), backpacking, science fiction, photography, board/card games