

CURRICULUM VITAE

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Education:

2004 PhD California Institute Of Technology
1990 MS California Institute Of Technology
1981 BS Universidad de Chile

Employment:

2004- Operation Staff Astronomer, Paranal Observatory.
Head of the Imaging Instrument Force at La Silla, and Support Scientist for OmegaCAM at VST.

1999-2004 Operation Staff Astronomer, La Silla Observatory.

1997-1999 Research Assistant, ESO-Santiago.

1994-1997 Self employed.

1992-1994 Teaching Assistant, Hawaii Pacific University.

1990-1992 Postdoctoral fellow IFA, Hawaii.

Awards:

1990 Beatrice Watson Parrent Postdoctoral Fellow IFA, University of Hawaii

1982 Carnegie-Chile Fellow Caltech

1982 Fulbright Travel Fellow Fulbright Foundation

Publications:

1. PhD Thesis, Caltech: *Star Formation History and IMF of the 30 Doradus Super-association.*, 2003.
2. Bosch, G.; Selman, F.; Melnick, J.; Terlevich, R., *The ionizing cluster of 30 Doradus.IV. Stellar kinematics.* A&A 380, 137 (2001)
3. Bosch, G.; Terlevich, R.; Selman, F.; Melnick, J., *Stellar dynamics in 30 Doradus* RMxAC 11, 101 (2001)
4. Wisotzki, L.; Selman, F.; Gilliote, A., *Commissioning the spectroscopic mode of the WFI at the MPG/ESO 2.2-m telescope at La Silla.* ESO Messenger 104, 8 (2001)
5. Urrutia, C.; Paz, T.; Robledo, E.; Gutierrez, F.; Baade, D.; Selman, F.; et al. *VLT-style observing with the Wide Field Imager at the MPG/ESO 2.2-m telescope at La Silla.* ESO Messenger 104, 14 (2001). Article written by FSE.
6. Manfroid, J.; Selman, F.; Jones, H.; *Achieving 1% photometric accuracy with the ESO Wide Field Imager*, ESO Messenger 104, 16 (2001)
7. Melnick, J.; Selman, F., *The IMF of Starbursts.* ApSSS 277, 299 (2001)
8. Selman, F.; Melnick, J.; *Superassociations as Part of a Fractal Hierarchy* ApJ, 534, 703 (2000)
9. Melnick, J.; Selman, F.; *Self-organized Criticality and the IMF of Starbursts.* ASP Conf. Ser. 215, 159
10. Melnick, J.; Selman, F.; *HII Galaxies as Cosmological Probes.* In Proceedings of the ESO Symposium held in Antofagasta, Chile, 1-4 March 1999, ed. by J. Bergeron and A. Renzini, Berlin: Springer-Verlag 2000, p. 252.
11. Melnick, J., Selman, F., and Quintana, H., *Sky Subtraction for Deep Surface Photometry of the Intergalactic Light from Clusters of Galaxies.* PASP, 111, 1444 (1999)
12. Selman, F.; Melnick, J., Bosch, G.; Terlevich, R.; *The ionizing Cluster of 30 Doradus. III. Star-formation history and the initial mass function.* A&A 347, 532 (1999)
13. Bosch, G.; Terlevich, R.; Melnick, J.; Selman, F.; *The ionizing Cluster of 30 Doradus. II. Spectral classification for 175 stars.* A&AS 137, 21 (1999)
14. Selman, F.; Melnick, J., Bosch, G.; Terlevich, R.; *The ionizing Cluster of 30 Doradus. I. Internal reddening from NTT photometry and multi-object spectroscopy.* A&A 347, 532 (1999)

15. Selman, F. J.; Melnick, J.; Bosch, G. L.; Terlevich, R. J.; *The IMF and star-formation history of the ionizing cluster of 30 Doradus.* in *Wolf-Rayet Phenomena in Massive Stars and Starburst Galaxies.* Proceedings of the 193rd symposium of the IAU held in Puerto Vallarta, Mexico, 3-7 November 1998". Ed. by K. van der Hucht, G. Koenigsberger, and P. Eenens. San Francisco, Calif. : ASP, 1999., p.495
16. Selman, F.; Melnick, J.; Bosch, G.; Terlevich, R.; *The extinction law and stellar content of the 30 Doradus super-association.* RMxAC 8, 157 (1999)
17. Bosch, G.; Terlevich, R.; Melnick, J.; Selman, F.; *Stellar kinematics in 30Dor: The mass of the ionizing cluster.* in IX Latin American Regional IAU Meeting, *Focal Points in Latin American Astronomy*, held in Tonantzintla, Mexico, Nov 9-13, 1998, Eds: Aguilar, A.; Carraminana, A.

Current and future research and activities

1. Star formation in the 30 Doradus super-association.I. I intend to continue the research in this region by adding to the UBV data I currently have, Halpha data to correct the HR diagrams from the effects of the Be stars.
2. Star formation in the 30 Doradus super-association.II. With the help of my associates we intend to determine spectral types for a large number of stars in the 30 Doradus SA to improve our knowledge of its stellar content, kinematics, and of what we call the Be-effect.
3. We intend to study the Arches cluster near the center of the galaxy to prove (or disprove) our hypothesis that the claimed flattening of the IMF is the result of the magnitude-limit effect. This is an important work towards our understanding of the universal character of the IMF for high mass stars.
4. With our collaborators from La Silla and Paranal we are applying a technique we originally developed to study the intergalactic light from clusters to attempt the detection of disks of highly ionized gas in edge-on spiral galaxies. Simple estimates places their brightness from Thompson scattering of the light from the parent galaxy at a level of 30-33 mags/arcsec², detectable with an 8-meter telescope (FORS or VIMOS). The hypothesis that the entry of the LMC in such a MW disk is what triggers the burst of star-formation in 30 Doradus, was advanced in my PhD thesis.
5. We are currently analyzing data from clusters of galaxies to determine the level of intergalactic light using the method we developed in a recent paper.
6. We intend to continue the development of a photometric flat-fielding technique for wide-field instruments that will permit photometric accuracy at the sub-percent level over the whole field.

7. We intend to continue the development of visualization techniques for scientific data, along the lines of the color-magnitude stereogram, and the program *chico* that will allow the quick view of physical parameters (see my web page for details).

Languages and work environments

Linux, HP-UX

Computer languages: C, Tcl, Python, VTK, Matlab

Astronomical software: IRAF, MIDAS, DS9, P2PP, OT, SkyCat

VLT software: wrote most of the WFI template library and seq files.

Membership:

American Astronomical Society

Sociedad Chilena de Astrofísica

SPIE