# Marco Scodeggio

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### Personal Data

born January 19, 1965 in Milano, Italy.
Citizenship: Italian.

### Education

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| 1997 | Ph.D. | Astronomy, Cornell University, Ithaca, NY (USA)<br>Thesis title: *The Distances to Nearby Galaxy Clusters*<br>Advisors: Riccardo Giovanelli and Martha Haynes |
| 1994 | M.S. | Astronomy, Cornell University, Ithaca, NY (USA) |
| 1991 | Diploma di Laurea | Physics, Università degli Studi, Milano (Italy)<br>Summa cum Laude<br>Thesis title: *Radiative Processes in Spiral Galaxies: an Analysis of Nine Clusters*<br>Advisors: Giuseppe Gavazzi and Guido Chincarini |

### Fellowships and Awards

Eleanor York Award, Cornell University, 1995.

### Professional Experience

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| 1999– | Astronomer, responsible for the VIRMOS Data Reduction Software, IFC |
| 1997–1999 | ESO Fellow |
| 1997–1998 | Support Astronomer at the 3.5m New Technology Telescope (NTT), La Silla (Chile) |
| 1995–1996 | Graduate Research Assistant, Dept. of Astronomy, Cornell University. |
| 1992–1994 | Teaching Assistant, Dept. of Astronomy, Cornell University. |
| 1992–1994 | Graduate Research Assistant, Dept. of Astronomy, Cornell University (summer trimesters). |

### Research Interests

MS scientific interests are in the field of extragalactic astronomy and observational cosmology. More specifically, the main interest is the study of the global evolution, star formation history, and large scale distribution of galaxies.
The three areas where MS research efforts are concentrated are:

1) the study of the star formation histories of present-day galaxies, the correlation between their star formation activity and the emission in the various bands of the electromagnetic spectrum, and the possible influence that the environment might have on the galaxies, and on their star formation activity;
2) the study of two commonly used distance indicator relations, the Tully-Fisher and Fundamental Plane relation, and their application both in the derivation of redshift-independent distance estimates, and in the

study of the evolution of the stellar population within galaxies;
3) the search and study of distant clusters of galaxies.

**Observing Experience**

Proposed and carried out medium and low dispersion single slit optical spectroscopic observations of galaxies in nearby clusters of galaxies, with the 5m Hale telescope of the Palomar Observatory (1993-1996); low dispersion optical spectroscopic observations of galaxies in nearby clusters, with the Norris multifiber spectrograph on the 5m Hale telescope of the Palomar Observatory (1993); low dispersion single slit optical spectroscopic observations of galaxies in nearby clusters of galaxies with the 2.4m telescope of the MDM Observatory (1992); optical CCD photometry of galaxies in nearby clusters, with the 0.9m telescope at KPNO (1994-1995), and the 1.3m telescope of the MDM observatory (1993); near-infrared NICMOS-array photometry of galaxies in nearby clusters, with the 1.5m telescope of the TIRGO Observatory (Gornergrat, Switzerland; 1997); near-infrared photometry of distant clusters of galaxies with SOFI at the 3.5m ESO New Technology Telescope (1998-2001), multi-object optical spectroscopic observations of distant clusters of galaxies with EFOSC2 at the ESO 3.6m telescope (1999).

Carried out CCD imaging and spectroscopic observations for the Service Observing program at the NTT (La Silla, Chile), as part of the NTT Support Astronomer duties (1997-1998).

Carried out also the following observations: optical CCD photometry of galaxies in nearby clusters, with the 1.5m telescope of the Loiano Observatory (Bologna, Italy; 1990); near-infrared multiaperture photometry of galaxies in nearby clusters, with the 1.5m telescope of the TIRGO Observatory (1990); 21cm line observations of spiral galaxies in nearby clusters, with the Arecibo 305m radio-telescope (1991).

**Software and Data Reduction**

Good knowledge of the Unix and Linux operating systems. Working knowledge of MS-Dos / Windows.

Good expertise with the C programming languages. Working knowledge of the Fortran and Python languages.

Extensive expertise with the realization of data reduction software for optical imaging and spectroscopic data, on Unix and Linux systems. This includes both the work on the VIMOS Data Reduction Software, and also the construction of new packages for IRAF.

Good experience with database software, primarily with relational database programs and the SQL language.

Basic knowledge of the main World Wide Web procedures, and of the use of HTML.

**Teaching Experience**

Teaching Assistant in introductory level astronomy classes at the Dept. of Astronomy at Cornell University. Classes covered the Solar System, basic stellar and extragalactic astronomy, and elementary notions of relativity and cosmology. Teaching duties included discussion sessions, where the material presented by the professor during lectures would be discussed, detailed, and expanded upon; laboratory sessions, where basic general physics and elementary astronomy experiments would be carried out; exam preparation and grading (limited to the individual discussion sessions); mid-course and final exam grading.

**Miscellaneous**

Member of the team carrying out the ESO Imaging Survey. MS is responsible of the implementation of algorithms that will allow an objective identification of a sample of clusters of galaxies within the area covered by the survey, and the preliminary study of their redshift distribution.

**Professional Associations**

American Astronomical Society (since 1994)

**Publications**

1. "Large–Scale Peculiar Velocity Fields in Superclusters of Galaxies"
Gavazzi, G., **Scodeggio, M.**, Boselli, A. & Trinchieri, G. 1991, Ap. J., 382, 19.
2. "Multifrequency Windows on Spiral Galaxies. II. The A262 and Cancer Clusters"
**Scodeggio, M.**, Boselli, A., Gavazzi, G., Trinchieri, G. & Garilli, B. 1992, A. & A. Suppl., 94, 299.
3. "Peculiar Velocities in the A262 Cluster"
Gavazzi, G., **Scodeggio, M.**, Boselli, A. & Trinchieri, G. 1992, A. & A., 258, 265.
4. "21 Centimeter Study of Spiral Galaxies in Clusters. III. Neutral Gas Content, Star Formation, and Radio Continuum Properties"
**Scodeggio, M.** & Gavazzi, G. 1993, Ap. J., 409, 110.
5. "HI 2334+26: an Extended HI Cloud near Abell 2634"
Giovanelli, R., **Scodeggio, M.**, Solanes, J.M., Haynes, M.P., Arce, H. & Sakai, S. 1995, A. J., 109, 1451.
6. "The Spatial Distribution, Kinematics, and Dynamics of the Galaxies in the Region of Abell 2634 and 2666"
**Scodeggio, M.**, Solanes, J.M., Giovanelli, R. & Haynes, M.P. 1995, Ap. J., 444, 41.
7. "The Radio and Optical Structure of Three Peculiar Galaxies in A1367"
Gavazzi, G., Contursi, A., Carrasco, L., Boselli, A., Kennicutt, R., **Scodeggio, M.** & Jaffe, W. 1995, A. & A., 304, 325.
8. "The Mass Dependence of the Star Formation History of Disk Galaxies"
Gavazzi, G. & **Scodeggio, M.** 1996, A. & A., 312, L29.
9. "The Relative Distance Between the Clusters of Galaxies A2634 and Coma"
**Scodeggio, M.**, Giovanelli, R. & Haynes, M.P. 1997, A. J., 113, 101.
10. "An Economical Technique for the Estimate of Galaxy Distances: The Photometric Fundamental Plane"
**Scodeggio, M.**, Giovanelli, R. & Haynes, M.P. 1997, A. J., 113, 2087.
11. "Seeking the Local Convergence Depth. I. Tully-Fisher Observations of the Clusters A168, A397, A569, A1139, A1228, and A1983"
Dale, D.A., Giovanelli, R., Haynes, M.P., **Scodeggio, M.**, Hardy, E. & Campusano, L. 1997, A. J., 114, 455
12. "Seeking the Local Convergence Depth. II. Tully-Fisher Observations of the Clusters A114, A119, A194, A2295, A2457, A2806, A3193, A33891 AND A3744"
Dale, D.A., Giovanelli, R., Haynes, M.P., **Scodeggio, M.**, Hardy, E. & Campusano, L. 1998, A. J., 115, 418
13. "The Universality of the Fundamental Plane of E and S0 Galaxies. Sample Definition and I Band Photometric Data"
**Scodeggio, M.**, Giovanelli, R. & Haynes, M.P. 1998, A. J., 116, 2728
14. "The Universality of the Fundamental Plane of E and S0 Galaxies. Spectroscopic Data"
**Scodeggio, M.**, Giovanelli, R. & Haynes, M.P. 1998, A. J., 116, 2738
15. "The Tilt of the Fundamental Plane of Early-type Galaxies: Wavelength Dependence"
**Scodeggio, M.**, Gavazzi, G., Belsole, E., Pierini, D., & Boselli, A., 1998, M. N. R. A. S., 301, 1001
16. "VLT and NTT Observations of two EIS Cluster Candidates. Detection of the Early-type Galaxies sequence at $z \sim 1$"
da Costa, L., **Scodeggio, M.**, Olsen, L.F., Nonino, M., Rengelink, R., Bender, R., Franx, M., Jorgensen, H.E., Renzini, A., 1999, A. & A., 343, L29
17. "The 3-D structure of the Virgo cluster from H band Fundamental Plane and Tully-Fisher distance determinations"
Gavazzi, G., Boselli, A., **Scodeggio, M.**, Belsole, E., & Pierini, D., 1999, M. N. R. A. S., 304, 595
18. "ESO Imagin Survey I. Description of the survey, data reduction and reliability of the data "
Nonino, M., Bertin, E., da Costa, L.N., Deul, E., Erben, T., Olsen, L.F., Prandoni, I., **Scodeggio, M.**,

Wicenec, A., Wichmann, R., Benoist, C., Freudling, W., Guarnieri, M.D., Hook, I., Hook, R., Mendez, R., Savaglio, S., Silva, D., Slijkhuis, R., 1999, A. & A. Suppl., 137, 51

19. "ESO Imaging Survey II. Searching for Distant Clusters of Galaxies"
Olsen, L.F., **Scodeggio, M.**, da Costa, L.N., Benoist, C., Bertin, E., Deul, E., Erben, T., Guarnieri, M.D., Hook, R., Nonino, M., Prandoni, I., Slijkhus, R., Wicenec, A., Wichmann, R., 1999, A. & A., 345, 681
20. "ESO Imaging Survey III. Multicolor Data near the South Galactic Pole"
Prandoni, I., Wichmann, R., da Costa, L., Benoist, C., Mendez, R., Nonino, M., Olsen, L.F., Wicenec, A., Zaggia, S., Bertin, E., Deul, E., Erben, T., Guarnieri, M.D., Hook, I., Hook, R., **Scodeggio, M.**, Slijkhuis, R., 1999, A. & A., 345, 448
21. "ESO Imaging Survey IV. Exploring the EIS Multicolor Data"
Zaggia, S., Hook, I., Mendez, R., da Costa, L., Olsen, L.F., Nonino, M., Wicenec, A., Benoist, C., Bertin, E., Deul, E., Erben, T., Guarnieri, M.D., Hook, R., Prandoni, I., **Scodeggio, M.**, Slijkhuis, R., Wichmann, R., 1999, A. & A. Suppl., 137, 75
22. "ESO Imaging Survey V. Cluster Search using Color Data"
Olsen, L.F., **Scodeggio, M.**, da Costa, L., Slijkhuis, R., Benoist, C., Bertin, E., Deul, E., Erben, T., Guarnieri, M.D., Hook, R., Nonino, M., Prandoni, I., Wicenec, A., Zaggia, S., 1999, A. & A., 345, 363
23. "ESO Imaging Survey VI. I-band data of patches C and D"
Benoist, C., da Costa, L., Olsen, L.F., Deul, E., Erben, T., Guarnieri, M.D., Hook, R., Nonino, M., Prandoni, I., **Scodeggio, M.**, Slijkhuis, R., Wicenec, A., Zaggia, S., 1999, A. & A., 346, 58
24. "ESO Imaging Survey VII. Distant Cluster Candidates over 12 square degrees"
**Scodeggio, M.**, Olsen, L.F., da Costa, L., Slijkhuis, R., Benoist, C., Deul, E., Erben, T., Hook, R., Nonino, M., Wicenec, A., Zaggia, S., 1999, A. & A. Suppl., 137, 83
25. "1.65 micrometers (H-band) surface photometry of galaxies. III: observations of 558 galaxies with the TIRGO 1.5m telescope"
Gavazzi, G., Franzetti, P., **Scodeggio, M.**, Boselli, A., Pierini, D., Baffa, C., Lisi, F., Hunt, L. K. 2000, A. & A. Suppl., 142, 65
26. "1.65 micrometers (H-band) surface photometry of galaxies. IV: observations of 170 galaxies with the Calar Alto 2.2m telescope "
Boselli, A., Gavazzi, G., Franzetti, P., Pierini, D., **Scodeggio, M.**, 2000, A. & A. Suppl., 142, 73
27. "The Late Afterglow and Host Galaxy of GRB 990712"
Hjorth, J., Holland, S., Courbin, F., Dar, A., Olsen, L.F., **Scodeggio, M.**, 2000, Ap. J., 534, L147
28. "EROs in the EIS fields. I. The AXAF (Chandra) deep field"
**Scodeggio, M.**, Silva, D.R., 2000, A. & A., 359, 953
29. "Spectroscopic confirmation of clusters from the ESO imaging survey"
Ramella, M., Biviano, A., Boschin, W., Bardelli, S., **Scodeggio, M.**, Borgani, S., Benoist, C., da Costa, L., Girardi, M., Nonino, M., Olsen, L.F., 2000, A. & A., 360, 861
30. "1.65 micrometers (H-band) surface photometry of galaxies. V: Profile decomposition of 1157 galaxies
Gavazzi, G., Franzetti, P., **Scodeggio, M.**, Boselli, A., Pierini, D., 2000, A. & A., 361, 863
31. "1.65mic (H-band) surface photometry of galaxies. VI: The history of star formation in normal late-type galaxies"
Boselli, A., Gavazzi, G., Donas, J., **Scodeggio, M.**, 2001, A. J., in press (March 2001 issue)
32. "Internal Color Gradients and the Color-Magnitude Relation of Early-Type Galaxies"
**Scodeggio, M.**, 2001, A. J., in press (May 2001 issue)

(33.) "The Universality of the Fundamental Plane of E and S0 Galaxies. The I-band Fundamental Plane relation"
**Scodeggio, M.**, Giovanelli, R. & Haynes, M.P. 2001, A. J., submitted

(34.) "ESO Imaging Survey. Hubble Deep Field South: Optical-Infrared Observations, Data Reduction and Photometry"
da Costa, L., Nonino, M., Rengelink, R., Zaggia, S., Benoist, C., Erben, T., Wicenec, A., **Scodeggio,**

**M.**, Olsen, L.F., Guarnieri, M.D., Deul, E., D'Odorico, S., Hook, R., Moorwood, A., Slijkhuis, R., 2000, A. & A., submitted

(35.) "ESO Imaging Survey. AXAF Field: Deep Optical-Infrared Observations, Data Reduction and Photometry"
Rengelink, R., Nonino, M., da Costa, L., Zaggia, S., Erben, T., Benoist, C., Wicenec, A., **Scodeggio, M.**, Olsen, L.F., Guarnieri, M.D., Deul, E., Hook, R., Moorwood, A., Slijkhuis, R., 2000, A. & A., submitted

**Contributed Papers**

1. "Structure and Dynamics of Abell 2634"
Solanes, J.M., **Scodeggio, M.**, Giovanelli, R. & Haynes, M.P. 1994, BAAS, 185, #53.06
2. "The Distance to the Cluster of Galaxies Abell 2634"
**Scodeggio, M.**, Giovanelli, R. & Haynes, M.P. 1996, BAAS, 187, #08.01
3. "A Comparison of Tully-Fisher and Fundamental Plane Distances for Nearby Clusters"
**Scodeggio, M.**, Giovanelli, R. & Haynes, M.P. 1997, in "Galaxy Scaling Relations" ed. L.N. da Costa & A. Renzini, p. 158
4. "A Purely Photometric Fundamental Plane ?"
**Scodeggio, M.**, Giovanelli, R. & Haynes, M.P. 1997, in "Galaxy Scaling Relations" ed. L.N. da Costa & A. Renzini, p. 390
5. "The I–Band Tully–Fisher Relation at Intermediate Redshifts"
Dale, D.A., Giovanelli, R., Haynes, M.P., **Scodeggio, M.**, Hardy, E. & Campusano, L., 1997, in "Galaxy Scaling Relations" ed. L.N. da Costa & A. Renzini, p. 341
6. "Distant clusters of galaxies in the ESO Imaging Survey"
**Scodeggio, M.**, Olsen, L.F., da Costa, L., 1998, in "Evolution of Large Scale Structure: From Recombination to Garching", in press
7. "Building a Sample of Distant Clusters of Galaxies"
da Costa, L., **Scodeggio, M.**, Olsen, L.F., Benoist, C., 1999, in "Large Scale Structure in the X-ray Universe", ed. M. Plionis, I. Georgantopoulos, p. 21
8. "Confirming EIS Clusters / Optical and Infrared Imaging"
Olsen, L.F., Jorgensen, H., **Scodeggio, M.**, da Costa, L., Rengelink, R., Nonino, M., Biviano, A., Ramella, M., Boschin, W., in "Clustering at High Redshift", ASP Conference Series, Vol. 200, ed. A. Mazure, O. Le Fevre, V. Le Brun, p. 440
9. "Confirming EIS Clusters. Multi-object Spectroscopy"
Biviano, A., Ramella, M., Boschin, W., Bardelli, S., **Scodeggio, M.**, da Costa, L., Olsen, L.F., Nonino, M., Borgani, S., Girardi, M., in "Clustering at High Redshift", ASP Conference Series, Vol. 200, ed. A. Mazure, O. Le Fevre, V. Le Brun, p. 390
10. "The Near-infrared Kappa Space of Early-and Late-type Galaxies"
Pierini, D., Gavazzi, G., Franzetti, P., **Scodeggio, M.**, Boselli, A., 2000, in "The Extragalactic Infrared Background and its Cosmological Implications" International Astronomical Union. Symposium no. 204, Manchester, England, August 2000
11. "Optical/Infrared Survey of Galaxy Clusters"
da Costa, L., et al. 2000, in "ESO/ECF/STScI Workhop on Deep Fields", Garching bei München, Germany, October 2000
12. "The VIRMOS-VLT Deep Survey"
Le Fèvre, O., et al. 2000, in "ESO/ECF/STScI Workhop on Deep Fields", Garching bei München, Germany, October 2000
13. "Automated spectral extraction for high multiplexing MOS and IFU observations"
**Scodeggio, M.**, Zanichelli, A., Garilli, B., Le Fèvre, O., Vettolani, G., 2000, "ADASS X Conference Proceedings", Boston, November 2000