

Hans Hippelein Klaus Meisenheimer
Hermann-Josef Röser (Eds.)

Galaxies in the Young Universe

Proceedings of a Workshop
Held at Ringberg Castle,
Tegernsee, Germany, 22–28 September 1994



Springer

Contents

I Cosmology

The Hot Big Bang and Beyond

M.S. Turner	1
-------------------	---

Cosmological Structure Formation in Hot and Cold Dark Matter Scenarios

G. Börner, H.J. Mo & Y.P. Jing	21
--------------------------------------	----

Observations and Cosmological Models

G.F.R. Ellis	51
--------------------	----

Fluctuation Spectra and High-Redshift Objects

J. Peacock & S. McNally	66
-------------------------------	----

II Observations of High-Redshift Galaxies

Galaxies at High Redshift: 1994

H. Spinrad	75
------------------	----

High-Redshift Milli-Jansky Radio Galaxies

J.S. Dunlop, J.A. Peacock & R.A. Windhorst	84
--	----

Spectroscopy and Imaging of a Forming Galaxy Causing Damped $\text{Ly}\alpha$ Absorption at $z = 2.81$

P. Møller & S.J. Warren	88
-------------------------------	----

$\text{Ly}\alpha$ Absorption in 4C 41.17

H. Hippelein, K. Meisenheimer & H.-J. Röser	93
---	----

The Revolution in Studies of Distant Radio Galaxies

H. Röttgering	97
---------------------	----

Detection of $10h^{-1}$ Mpc Quasar/Absorber Correlation at High Redshift

P. Møller	106
-----------------	-----

Large-Scale Structure at $z \sim 2.5$

G.M. Williger, C. Hazard, J.A. Baldwin & R.G. McMahon	110
---	-----

III Observations of Intermediate-Redshift Galaxies

Spectroscopy of 600 Faint Field Galaxies at CFHT

F. Hammer, L. Tresse, S. Lilly, O. Le Fèvre, D. Crampton & C. Rola	117
--	-----

Deep Near-Infrared Imaging with the Keck Telescope	
M.A. Bershadsky	125
Galaxy Evolution in the Infrared	
J. Peacock	130
The Tully-Fisher Relation at Intermediate Redshifts	
M.A. Bershadsky	139
A Cluster of Galaxies at $z = 1.206$	
M. Dickinson	144
Galaxy Populations in Intermediate-Redshift Clusters	
P. Belloni & H.-J. Röser	153
What is 3C 324?	
M. Dickinson, A. Dey & H. Spinrad	164
Spectrophotometry of Distant Radio Galaxies with the Field Spectrograph TIGER/CFHT	
B. Rocca-Volmerange	173

IV Constraints from Nearby Galaxies

Low-Redshift Constraints on the Formation of Elliptical Galaxies	
R. Bender	178
Constraints from Element Abundances in the Galaxy	
T. Gehren	190

V Models and Simulations of Galaxy Formation

Dissipative Collapse of a Non-Rotating System	
Ch. Theis & G. Hensler	201
Mergers and Galaxy Evolution	
R.G. Carlberg	206
Are Ellipticals Formed by Merging Spirals?	
M. Steinmetz & S. Buchner	215
The Structure of Dark Matter Haloes in Dwarf Galaxies	
A. Burkert	220
Spectra of Young Galaxies	
S. Charlot	226
Pure Luminosity Evolution Models of Faint Galaxy Samples	
G. Bruzual A. & L. Pozzetti	237
Number Density Predictions for Primeval Galaxies	
E. Thommes & K. Meisenheimer	242
Self-Regulation Models for Star Formation	
J. Silk	250

VI Survey Activities

The Sloan Digital Sky Survey	
R.G. Kron	260
The Nature of Faint Galaxies from the Medium Deep Survey and Other Deep HST Images	
R.A. Windhorst <i>et al.</i>	265
The Calar Alto Deep Imaging Survey	
K. Meisenheimer <i>et al.</i>	273
An Infrared Search for Primeval Galaxies	
S.V.W. Beckwith, F. Mannucci & D. Thompson	283
Radio Surveys	
J.J. Condon	289

VII High-Redshift Galaxies: Problems and Prospects

G. Efstathiou	299
---------------------	-----