

THE ASTRONOMICAL JOURNAL

EXCLU DU PRÊT

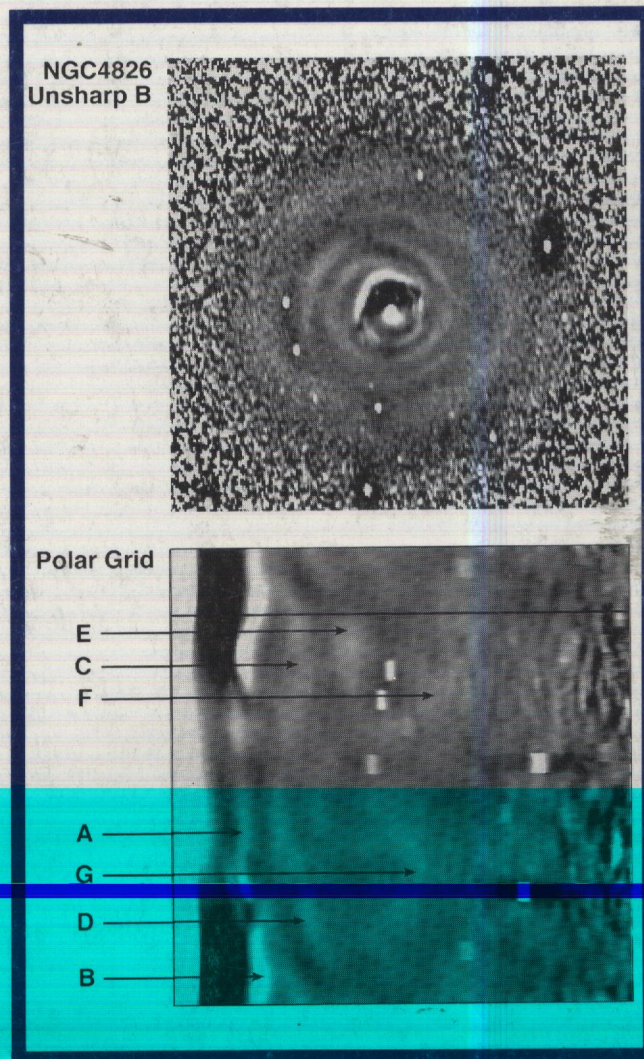
FOUNDED BY B. A. GOULD
1849



VOLUME 107

January 1994 ~ No. 1656

NUMBER 1



(See Page 184)

Published for the
AMERICAN ASTRONOMICAL SOCIETY
by the
AMERICAN INSTITUTE OF PHYSICS

THE ASTRONOMICAL JOURNAL

Second-Class Postage
Paid at Woodbury, New York,
and Additional Mailing Offices

Postmaster: If undeliverable, send notice on Form 3579 to:
American Institute of Physics
500 Sunnyside Boulevard
Woodbury, New York 11797-2999

ISSN: 0004-6256
CODEN: ANJOAA

VOLUME 107, NUMBER 1	CONTENTS	JANUARY 1994
SEARCHES FOR PRIMEVAL GALAXIES IN THE NEAR INFRARED.	<i>D. Thompson, S. Djorgovski, and S. V. W. Beckwith</i>	1
GALAXY EVOLUTION IN DISTANT, X-RAY SELECTED CLUSTERS OF GALAXIES. II. CL 0303+1658 AND CL 0303+1717	<i>Daniel G. Fabricant, Marshall W. Bautz, and Jeffrey E. McClintock</i>	8
MULTICOLOR DETECTION OF HIGH-REDSHIFT QUASARS. I. TWO OBJECTS AT $z > 4$	<i>J. D. Smith, D. Thompson, and S. Djorgovski</i>	24
HIGH-RESOLUTION OPTICAL IMAGING OF THE GRAVITATIONAL LENS SYSTEM B1422+231.	<i>H. K. C. Yee and E. Ellingson</i>	28
GALAXIES WITH SPECTRAL ENERGY DISTRIBUTIONS PEAKING NEAR 60 μm . II. OPTICAL BROADBAND PROPERTIES	<i>Charlene Anne Heisler and J. Patricia Vader</i>	35
COLD, WARM, AND HOT GAS IN THE LATE-STAGE MERGER NGC 7252	<i>J. E. Hibbard, Puragra Guhathakurta, J. H. van Gorkom, and Francois Schweizer</i>	67
APERTURE SYNTHESIS OBSERVATIONS OF H I AND CO IN THE EARLY TYPE STARBURST GALAXY NGC 3928	<i>Jonathan G. Li, E. R. Seaquist, Zhong Wang, and L. J. Sage</i>	90
A NEUTRAL HYDROGEN SURVEY OF POLAR-RING GALAXIES. I. GREEN BANK OBSERVATIONS OF THE NORTHERN SAMPLE	<i>O. -G. Richter, P. D. Sackett, and L. S. Sparke</i>	99
MEAN MORPHOLOGICAL TYPES OF BRIGHT GALAXIES.	<i>R. Buta, S. Mitra, G. de Vaucouleurs, and H. G. Corwin, Jr.</i>	118
COLORS AND COLOR GRADIENTS IN BULGES OF GALAXIES.	<i>Marc Balcells and Reynier F. Peletier</i>	135
THE NATURE OF S0 GALAXIES	<i>Sidney van den Bergh</i>	153
THE DYNAMICS AND STRUCTURE OF THE S0 GALAXY NGC 7332.	<i>David Fisher, Garth Illingworth, and Marijn Franx</i>	160
KINEMATICS OF NGC 4826: A SLEEPING BEAUTY GALAXY, NOT AN EVIL EYE.	<i>Vera C. Rubin</i>	173
THE OPTICAL MORPHOLOGY OF THE KINEMATICALLY PECULIAR GALAXY NGC 4826	<i>R. A. M. Walterbos, R. Braun, and R. C. Kennicutt, Jr.</i>	184
A STUDY OF THE STELLAR POPULATIONS OF M32 BASED ON ITS SPATIALLY RESOLVED SPECTRUM	<i>Eduardo Hardy, Jean Couture, Christian Couture, and Gilles Joncas</i>	195
THE INTEGRATED SPECTRA OF M32 AND OF 47 TUC: A COMPARATIVE STUDY AT HIGH SPECTRAL RESOLUTION	<i>James A. Rose</i>	206
BVRI CCD PHOTOMETRY OF THE GLOBULAR CLUSTER NGC 1904 (M79)*	<i>Gonzalo Alcaino, William Liller, Franklin Alvarado, and Erich Wenderoth</i>	230
NEAR-INFRARED ARRAY PHOTOMETRY OF EVOLVED STARS IN THE METAL-RICH GLOBULAR CLUSTER NGC 6553	<i>T. J. Davidge and D. A. Simons</i>	240
THE LOWEST MASS STARS IN THE HYADES.	<i>Clara Bryja, Roberta M. Humphreys, and Terry J. Jones</i>	246
OPTICAL STUDIES OF γ -RAY BURST FIELDS. I. GRB 790329.	<i>Thomas E. Harrison, Bernard J. McNamara, and Arnold R. Klemola</i>	254
THE UNITY AND DIVERSITY OF PLANETARY OR NEBULAE RADIATION-GASDYNAMICS OF PNe. II.	<i>Adam Frank</i>	261
HEAT CONDUCTION FRONTS IN PLANETARY NEBULAE	<i>Noam Soker</i>	276
THE U.S. NAVAL OBSERVATORY CATALOG OF POSITIONS OF INFRARED STELLAR SOURCES	<i>Robert B. Hindsley and Robert S. Harrington</i>	280
ON THE NATURE OF 21 cm EMISSION PROFILE STRUCTURE AT HIGH GALACTIC LATITUDE: IMPLICATIONS FOR THE WARM NEUTRAL MEDIUM	<i>Gerrit L. Verschuur and Loris Magnani</i>	287
HIGH-SPEED HUBBLE SPACE TELESCOPE ULTRAVIOLET PHOTOMETRY OF TWO DB WHITE DWARFS: NONRADIAL AND RADIAL PULSATIIONS.	<i>Steven D. Kawaler, Howard E. Bond, Lisa E. Sherbert, and Todd K. Watson</i>	298
ORBITAL COPLANARITY IN SOLAR-TYPE BINARY SYSTEMS: IMPLICATIONS FOR PLANETARY SYSTEM FORMATION AND DETECTION	<i>Alan Hale</i>	306
LOW MASS COMPANIONS TO NEARBY STARS: SPECTRAL CLASSIFICATION AND ITS RELATION TO THE STELLAR/SUBSTELLAR BREAK.	<i>J. Davy Kirkpatrick and Donald W. McCarthy, Jr.</i>	333
STELLAR OXYGEN ABUNDANCES. II. ON THE LOCATION OF THE BREAK IN THE [O/FE] VERSUS [FE/H] PLANE	<i>Jeremy R. King</i>	350
AN EMPIRICAL ANALYSIS OF ABSORPTION FEATURES IN SYNTHETIC SPECTRA	<i>R. G. McQuitty, T. R. Jaffe, E. D. Friel, and C. M. Dalle Ore</i>	359
SOME PROPERTIES OF MILLIMETRIC SPACE DEBRIS	<i>S. J. Goldstein, Jr. and R. M. Goldstein</i>	367
HEAT FROM PLUTO	<i>David C. Jewitt</i>	372
A RADIO/OPTICAL REFERENCE FRAME. V. ADDITIONAL SOURCE POSITIONS IN THE MID-LATITUDE SOUTHERN HEMISPHERE.	<i>J. L. Russell, J. E. Reynolds, D. L. Jauncey, C. de Vegt, N. Zacharias, C. Ma, A. L. Fey, K. J. Johnston, R. Hindsley, J. A. Hughes, D. F. Malin, G. L. White, N. Kawaguchi, and Y. Takahashi</i>	379
RADIO OPTICAL REFERENCE FRAME VI. ADDITIONAL SOURCE POSITIONS IN THE NORTHERN HEMISPHERE	<i>A. L. Fey, J. L. Russell, C. de Vegt, N. Zacharias, K. J. Johnston, C. Ma, D. M. Hall, and E. R. Holdener</i>	385
ERRATUM: "TWO EXTREME H I SUPERSHELLS IN THE DISTURBED EDGE-ON GALAXY NGC 4631" [ASTRON. J. 105, 2098 (1993)]	<i>Richard J. Band and J. M. van der Hulst</i>	392