

Australian Astronomy Publication and Facilities Survey

Prepared by Decadal Plan Working Group 3.1

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Methodology

We have undertaken a survey of Australian Astronomers. Astronomers were contacted via the Astronomical Society of Australia email list and asked to fill out a form, ascribing percentages of their papers to various facilities, or to theory. For our analysis we used the Astrophysical Data Service (ADS) database, including publications that were labeled as astronomy papers, and which were published between 1996-2004. Astronomers were asked to exclude papers which were not undertaken while resident in Australia, and those papers which were not theirs (same name). Citations were taken from all sources, as listed by ADS, to the date of 28 April 2005.

This survey does not accurately measure the impact of Australian Astronomy relative to international benchmarks because it is incomplete. However, it is useful in assessing the relative impact of Australian facilities on our publications, because it does sample a significant fraction of Australian astronomical papers over the period. In total, a 130 astronomers participated in the survey, entering information for 2063 distinct papers. It is also apparent that some fields, such as Gravity wave astronomy, publications are largely contained in physics journals, and are not covered by the ADS astronomy database.

In our analysis, we were able to analyse only those publications which people had assigned at least one facility to. If they left the facility as, "not completed", then the publication was ignored.

In all cases, if more than one astronomer provided a percentage to a publication, we averaged their results, by summing each astronomers results, dividing by the number of responses.

There are different ways (and philosophies) to judge the importance of facilities, and we break these down into 7 separate cases. Although we prefer two of the methods over the others.

Case 1: Measure the total number of publications that are attributable to each facility, weighted by the percentage that each astronomer ascribed to each publication. This provides an estimate of the total number of papers being driven by each facility, independent of quality, and independent of the fraction of Australian authors on the paper (as long as it is not 0!). It is a measure of the relative usage of each facility in producing scientific works.

Case 2: Same as Case 1, but normalized by the fraction of Australian authors on the paper. In this case, if a paper has 20 authors, 3 of which are Australian, the paper is de-

weighted by 3/20, relative to a paper which has only Australian Authors. Australian Authors are defined, in this case, as people who have filled out the survey – not by their affiliation as listed on the paper. While this would be a bad thing to do in measuring absolute impact, because we are measuring relative impact, it should not affect results significantly.

Case 3: Same as Case 1, but normalized by the total number of citations the paper has received. Each paper with an Australian author is treated equally – a paper with 1 out of 20 Australian authors is not de-weighted with respect to a paper which is solely Australian. This is the simplest way of measuring the sum of quantity times quality of a paper.

Case 4: Same as Case 3, but normalized by the average number of citations that papers from around the world have received in that year. Since we are dealing with publications from 1996 (average # of citations 16.7) to 2004 (average # of citations 2.5), papers in 1996 are given 7 times more weight than the youngest papers, and this method removes this bias.

Case 5: Same as Case 3, but normalized by the fraction of Australian authors. This is a citation weighted, Australian fraction weighted quality index, which ignores the bias of younger versus older papers.

Case 6: Same as Case 5, but now weights, as in Case 4, by the average number of citations in a papers year.

Case 7: The average citations for a paper relative to the mean number of citations for the year for each facility. Facilities whose papers were cited at the yearly mean would have a value of 1. The average is weighted by the fraction that each paper is ascribed to each facility. This is a pure quality measure, but has strong biases in this context. Overseas facilities often have higher quality measures because only an elite few proposals are able to get time. We have included, for reference, the fraction of Australian paper output (case 1) that each facility contributes. We will not discuss this quality measure further because we believe it of little use for the decadal plan.

Finally, for each case (except case 7), we have grouped the data into the broad facility areas Theory, Radio/mm/submm, UV-Optical-IR, X-ray-Gamma Ray, Airshower, and Gravity Wave.

Analysis

The choice of the method of analysis does not change the broad conclusions reached by the Survey. It is only if one tries to play league tables between facilities – which this survey is not complete enough to do except in a very rough sense – that one would get different answers between which method is chosen for the analysis. See attached spreadsheet for full rundown and a list of participants in the survey.

Total Impact of Facilities based on Number of Publications:

This idea is encapsulated in case 1 and 2. We believe that the impact to Australian Astronomy is best measured by case 2, which weights large international collaborations by the number of Australian participants. Whether you like case 1 or 2, we see that the

numbers of Australian astronomy publications are dominated by research which uses the two ATNF radio facilities, The AAT, ANU Optical Facilities, and Theory. If we look across broad facility areas, Australian publications are more than 70% made up of facilities covering from the UV through to the Radio, with an approximately even split between the radio and optical regimes. There are significant number of theory papers, and smaller numbers of papers in the High-Energy areas of airshower astronomy, X-ray/Gamma Ray Astronomy, and Gravity Wave Astronomy.

Total Impact of Facilities based on Citations Rates:

This idea is encapsulated in cases 3-6. We believe that the impact to Australian Astronomy is best measured by case 6, which tries to take into account the age of the paper, and weights papers by the fraction of Australian contributors. Once again, The broadbrush details are the same, regardless of the method. Facilities run by the AAT ATNF are the most influential, with important contributions by the ANU optical facilities, and theory. International facilities which Australia does not make a financial contribution towards are also well represented, with HST heading the list, but also other large optical facilities, the VLA, and space-based telescopes such as Chandra.

If we look across broad facility areas, Australian citations are once again dominated by the Optical through Radio facilities, with an UV/Optical/IR facilities producing nearly $\frac{1}{2}$ of all of Australia's citations, and Radio/mm/sub-mm more than a quarter. There are significant impacts in theory, as well non-negligible impact in areas of airshower astronomy, X-ray/Gamma Ray Astronomy, and Gravity Wave Astronomy.

Case 1	Case 2
12.0 ATNF ATCA	14.3 ATNF ATCA
10.8 Australian ANU Optical	11.7 ATNF Parkes
10.4 ATNF Parkes	9.9 Theory Analytic
9.8 AAO AAT	9.4 Australian ANU Optical
6.0 Theory Analytic	9.2 AAO AAT
5.7 Space HST	3.8 Other
3.6 International OIR ESO	3.6 Space HST
3.6 Other	3.1 AAT UKSchmidt
3.3 International OIR Other	3.0 International OIR ESO
2.6 AAT UKSchmidt	2.5 Australian Swinburne Computational
2.0 International Radio VLA	2.5 International OIR Other
1.8 International OIR NOAO (KPNO+CTIO)	2.0 Australian UNSW Antarctic
1.7 International OIR La_Palma	1.8 Australian University Other
1.6 ATNF VLBI	1.7 Australian USyd MOST
1.5 Australian Swinburne Computational	1.7 International Radio VLA
1.4 Australian USyd MOST	1.3 Space X-ray other
1.2 Space X-ray other	1.2 International OIR NOAO (KPNO+CTIO)
1.2 International OIR KECK	1.1 International OIR La_Palma
1.2 International Radio-mm-submm Other	1.1 ATNF VLBI
1.1 Australian UNSW Antarctic	0.9 International Radio-mm-submm Other
1.1 Australian University Other	0.9 Australian UWA Gravitational
1.0 Space Chandra	0.8 ATNF Mopra
0.8 Space ROSAT	0.8 International OIR US Optical Other
0.8 International OIR US Optical Other	0.7 Australian VPAC
0.8 Australian UWA Gravitational	0.7 International OIR KECK
0.8 International OIR UKIRT	0.7 Space ROSAT
0.7 ATNF Mopra	0.7 International High Performance Computing
0.6 International Cosmic Ray HiRes	0.7 International Cosmic Ray Pierre Auger
0.6 Space Gamma Rays	0.6 International OIR UKIRT
0.6 International Radio European mm-submm	0.6 International Radio European mm-submm
0.6 International Radio U.S. mm-submm	0.6 Australian APAC
0.5 Australian Perth Observatory	0.6 Australian Perth Observatory
0.5 Space Optical-UV-IR Other	0.5 Space Chandra
0.5 International Cosmic Ray Pierre Auger	0.5 Space Other
0.5 Space Other	0.5 Australian Adelaide Cosmic Ray
0.4 Australian Adelaide Cosmic Ray	0.4 Space Optical-UV-IR Other
0.4 International Radio Jodrell Bank	0.3 Australian UTas Radio
0.4 Australian APAC	0.3 International Radio Jodrell Bank
0.4 Space VSOP	0.3 International Radio U.S. mm-submm
0.4 Australian UNSW APT/ROTSE	0.3 Australian Gemini
0.4 International Radio VLBA	0.2 Australian UNSW APT/ROTSE
0.4 Australian VPAC	0.2 Space Gamma Rays
0.4 International OIR Subaru	0.2 International Radio Westerbork
0.4 International OIR Palomar	0.2 International OIR Subaru
0.3 International High Performance Computing	0.2 International Radio VLBA
0.3 International OIR CFHT	0.2 International OIR Europe Optical Other
0.3 Australian Adelaide Airshower	0.2 International Radio Bonn
0.3 Australian Gemini	0.2 International Radio JCMT
0.3 International Radio JCMT	0.2 Australian UTas Optical
0.3 Australian UTas Radio	0.2 International OIR Palomar
0.2 International Radio Bonn	0.1 Space VSOP
0.2 Australian UTas Optical	0.1 Space XMM-Newton
0.2 International OIR Europe Optical Other	0.1 Australian UNSW Mopra
0.2 International Radio Westerbork	0.1 International OIR MMT
0.2 Space XMM-Newton	0.1 International Radio GBT
0.1 International Gravity Other	0.1 International OIR CFHT
0.1 International Radio GBT	0.1 International Cosmic Ray HiRes

Cases

0.1 Australian UNSW Mopra
0.1 Space FUSE
0.1 International OIR MMT
0.1 Australian National Facility Other
0.1 International Radio GMRT

46.2 UV-Optical-IR
32.9 radio-mm-submm
8.3 Theory
3.7 Xray-Gamma
1.9 Airshower
0.9 Gravity Wave

39.0 UV-Optical-IR
34.7 radio-mm-submm
13.7 Theory
2.9 Xray-Gamma
1.4 Airshower
0.9 Gravity Wave

Case 3

14.0 AAO AAT
 10.8 Space HST
 10.5 Australian ANU Optical
 7.7 ATNF Parkes
 7.4 ATNF ATCA
 6.3 International OIR NOAO (KPNO+CTIO)
 5.1 International OIR KECK
 4.5 Theory Analytic
 3.9 Other
 3.3 International OIR ESO
 2.4 International OIR Other
 2.2 Space Gamma Rays
 2.1 International OIR La_Palma
 1.9 International OIR CFHT
 1.9 Space Chandra
 1.8 AAT UKSchmidt
 1.6 International Radio VLA
 0.9 Australian USyd MOST
 0.9 ATNF VLBI
 0.9 International OIR Palomar
 0.8 International OIR US Optical Other
 0.8 Australian University Other
 0.7 Space ROSAT
 0.7 Space X-ray other
 0.6 International OIR UKIRT
 0.4 International Radio U.S. mm-submm
 0.4 International Radio-mm-submm Other
 0.4 International OIR Subaru
 0.4 Australian UNSW Antarctic
 0.4 Space Other
 0.3 Space VSOP
 0.3 International Radio European mm-submm
 0.3 Australian Swinburne Computational
 0.3 International Cosmic Ray HiRes
 0.3 International OIR Europe Optical Other
 0.2 International Radio Jodrell Bank
 0.2 International Radio JCMT
 0.2 Space Optical-UV-IR Other
 0.2 Australian APAC
 0.2 Australian UWA Gravitational
 0.2 Australian UTas Radio
 0.2 International Radio Bonn
 0.1 Space XMM-Newton
 0.1 Australian Perth Observatory
 0.1 Australian Adelaide Cosmic Ray
 0.1 Australian Adelaide Airshower
 0.1 Australian Gemini
 0.1 Australian UNSW APT/ROTSE
 0.1 International Radio VLBA
 0.1 International High Performance Computing
 0.1 ATNF Mopra
 0.1 International Radio GBT
 0.1 Australian VPAC
 0.1 International Cosmic Ray Pierre Auger
 0.1 International Gravity Other
 0.1 International Radio Westerbork

Case 4

15.1 AAO AAT
 9.4 Australian ANU Optical
 9.2 Space HST
 8.3 ATNF Parkes
 6.8 ATNF ATCA
 5.0 International OIR NOAO (KPNO+CTIO)
 4.8 International OIR KECK
 4.6 Theory Analytic
 3.7 Other
 3.4 International OIR ESO
 2.9 International OIR Other
 2.5 International OIR La_Palma
 2.3 Space Chandra
 2.1 International OIR CFHT
 2.0 International Radio VLA
 1.8 AAT UKSchmidt
 1.6 Space Gamma Rays
 0.9 International OIR Palomar
 0.8 Space X-ray other
 0.8 International OIR US Optical Other
 0.8 ATNF VLBI
 0.8 Australian Swinburne Computational
 0.8 Australian USyd MOST
 0.7 International OIR Subaru
 0.6 Space ROSAT
 0.6 Australian University Other
 0.5 International OIR UKIRT
 0.5 Space Other
 0.5 International Radio U.S. mm-submm
 0.5 International Cosmic Ray HiRes
 0.5 Australian UNSW Antarctic
 0.4 International Radio-mm-submm Other
 0.3 Australian APAC
 0.3 International Radio Jodrell Bank
 0.3 International Radio European mm-submm
 0.3 International Radio JCMT
 0.3 Australian Gemini
 0.3 International High Performance Computing
 0.3 Australian VPAC
 0.3 Australian Adelaide Airshower
 0.3 International OIR Europe Optical Other
 0.2 Australian UWA Gravitational
 0.2 Space VSOP
 0.2 International Radio Bonn
 0.2 Space Optical-UV-IR Other
 0.2 International Radio GBT
 0.1 International Radio VLBA
 0.1 Australian National Facility Other
 0.1 Space XMM-Newton
 0.1 Australian Adelaide Cosmic Ray
 0.1 International Cosmic Ray Pierre Auger
 0.1 International Gravity Other
 0.1 ATNF Mopra
 0.1 Australian UNSW APT/ROTSE
 0.1 Australian UTas Radio
 0.1 Australian Perth Observatory
 0.1 International Radio Westerbork

Cases

62.1 UV-Optical-IR
21.0 radio-mm-submm
5.5 Xray-Gamma
5.1 Theory
0.6 Airshower
0.3 Gravity Wave

60.7 UV-Optical-IR
21.4 radio-mm-submm
6.1 Theory
5.3 Xray-Gamma
1.1 Airshower
0.3 Gravity Wave



Case 5

13.0 AAO AAT
 12.5 ATNF ATCA
 10.8 Australian ANU Optical
 10.7 ATNF Parkes
 8.2 Theory Analytic
 6.5 Space HST
 3.5 International OIR ESO
 3.2 International OIR NOAO (KPNO+CTIO)
 2.9 Other
 2.2 AAT UKSchmidt
 2.2 International OIR KECK
 2.1 Australian University Other
 2.0 International OIR Other
 1.8 International OIR La_Palma
 1.8 International Radio VLA
 1.6 Australian USyd MOST
 1.0 Space ROSAT
 1.0 Australian UNSW Antarctic
 0.9 Space Chandra
 0.9 International OIR US Optical Other
 0.9 Australian Swinburne Computational
 0.9 Space X-ray other
 0.7 Space Other
 0.7 ATNF VLBI
 0.6 International OIR Palomar
 0.6 International OIR UKIRT
 0.6 Space Gamma Rays
 0.5 International High Performance Computing
 0.5 International Radio-mm-submm Other
 0.5 International OIR Europe Optical Other
 0.5 International OIR CFHT
 0.4 International Radio European mm-submm
 0.4 Australian VPAC
 0.3 International Radio Jodrell Bank
 0.3 International Radio JCMT
 0.3 International Radio U.S. mm-submm
 0.3 Australian UWA Gravitational
 0.3 Australian APAC
 0.2 Space Optical-UV-IR Other
 0.2 ATNF Mopra
 0.2 Australian UTas Radio
 0.2 International OIR Subaru
 0.2 International Radio Bonn
 0.1 Space XMM-Newton
 0.1 Australian UTas Optical
 0.1 Australian Adelaide Cosmic Ray
 0.1 Australian Gemini
 0.1 Australian UNSW APT/ROTSE
 0.1 International Cosmic Ray Pierre Auger
 0.1 International Radio Westerbork
 0.1 International Radio GBT
 0.1 Australian Perth Observatory
 0.1 International Cosmic Ray AGASA
 0.1 International Cosmic Ray HiRes



Case 6

13.0 AAO AAT
 11.2 ATNF ATCA
 11.0 ATNF Parkes
 9.7 Australian ANU Optical
 7.8 Theory Analytic
 5.6 Space HST
 3.5 International OIR ESO
 3.0 International OIR NOAO (KPNO+CTIO)
 2.8 Other
 2.5 International OIR KECK
 2.5 International OIR Other
 2.1 Australian Swinburne Computational
 2.0 International OIR La_Palma
 2.0 International Radio VLA
 1.9 AAT UKSchmidt
 1.5 Australian University Other
 1.2 Space Chandra
 1.2 Australian USyd MOST
 1.1 Australian UNSW Antarctic
 1.0 International High Performance Computing
 0.9 International OIR US Optical Other
 0.9 Space X-ray other
 0.8 Space Other
 0.8 Australian APAC
 0.8 Space ROSAT
 0.7 ATNF VLBI
 0.7 Australian VPAC
 0.6 International OIR Europe Optical Other
 0.5 International OIR Palomar
 0.5 International OIR UKIRT
 0.5 International Radio-mm-submm Other
 0.5 International OIR CFHT
 0.5 Space Gamma Rays
 0.3 International Radio U.S. mm-submm
 0.3 International Radio JCMT
 0.3 International Radio Jodrell Bank
 0.3 International Radio European mm-submm
 0.3 Space Optical-UV-IR Other
 0.3 International OIR Subaru
 0.3 Australian UWA Gravitational
 0.2 ATNF Mopra
 0.2 International Radio Westerbork
 0.2 International Cosmic Ray Pierre Auger
 0.2 Australian Gemini
 0.2 Australian Adelaide Cosmic Ray
 0.2 International Radio Bonn
 0.1 Australian UNSW APT/ROTSE
 0.1 International Radio GBT
 0.1 Space XMM-Newton
 0.1 International Radio VLBA
 0.1 International Cosmic Ray HiRes
 0.1 Australian Perth Observatory
 0.1 Australian UTas Radio
 0.1 Australian UTas Optical

Cases



49.9 UV-Optical-IR
29.9 radio-mm-submm
9.8 Theory
3.3 Xray-Gamma
0.5 Airshower
0.3 Gravity Wave



49.1 UV-Optical-IR
29.0 radio-mm-submm
11.4 Theory
3.5 Xray-Gamma
0.6 Airshower
0.3 Gravity Wave

Case 7

15.1 AAO AAT
 9.4 Australian ANU Optical
 9.2 Space HST
 8.3 ATNF Parkes
 6.8 ATNF ATCA
 5.0 International OIR NOAO (KPNO+CTIO)
 4.8 International OIR KECK
 4.6 Theory Analytic
 3.7 Other
 3.4 International OIR ESO
 2.9 International OIR Other
 2.5 International OIR La_Palma
 2.3 Space Chandra
 2.1 International OIR CFHT
 2.0 International Radio VLA
 1.8 AAT UKSchmidt
 1.6 Space Gamma Rays
 0.9 International OIR Palomar
 0.8 Space X-ray other
 0.8 International OIR US Optical Other
 0.8 ATNF VLBI
 0.8 Australian Swinburne Computational
 0.8 Australian USyd MOST
 0.7 International OIR Subaru
 0.6 Space ROSAT
 0.6 Australian University Other
 0.5 International OIR UKIRT
 0.5 Space Other
 0.5 International Radio U.S. mm-submm
 0.5 International Cosmic Ray HiRes
 0.5 Australian UNSW Antarctic
 0.4 International Radio-mm-submm Other
 0.3 Australian APAC
 0.3 International Radio Jodrell Bank
 0.3 International Radio European mm-submm
 0.3 International Radio JCMT
 0.3 Australian Gemini
 0.3 International High Performance Computing
 0.3 Australian VPAC
 0.3 Australian Adelaide Airshower
 0.3 International OIR Europe Optical Other
 0.2 Australian UWA Gravitational
 0.2 Space VSOP
 0.2 International Radio Bonn
 0.2 Space Optical-UV-IR Other
 0.2 International Radio GBT
 0.1 International Radio VLBA
 0.1 Australian National Facility Other
 0.1 Space XMM-Newton
 0.1 Australian Adelaide Cosmic Ray
 0.1 International Cosmic Ray Pierre Auger
 0.1 International Gravity Other
 0.1 ATNF Mopra
 0.1 Australian UNSW APT/ROTSE
 0.1 Australian UTas Radio
 0.1 Australian Perth Observatory
 0.1 International Radio Westerbork

60.7 UV-Optical-IR
21.4 radio-mm-submm
6.1 Theory
5.3 Xray-Gamma
1.1 Airshower
0.3 Gravity Wave

Appendix 1: List of Top 1% Papers with Australian Authors

We have identified the top Australian papers, 1996-2004, by listing all papers that have citations equal to or more than 99% of the papers in their year. These identifications are necessarily a little uncertain for the 2003-4 papers, due to the short time after publications. This is not a complete list, it only represents those papers included in the survey.

1. 1996 Colless, Matthew; Dunn, Andrew M.; Structure and Dynamics of the Coma Cluster 1996ApJ...458..435C
2. 1996 Ellis, Richard S.; Colless, Matthew; Broadhurst, Tom; Heyl, Jeremy; Glazebrook, Karl; Autofib Redshift Survey - I. Evolution of the galaxy luminosity function 1996MNRAS.280..235E
3. 1996 Kneib, J.-P.; Ellis, R. S.; Smail, I.; Couch, W. J.; Sharples, R. M.; Hubble Space Telescope Observations of the Lensing Cluster Abell 2218 1996ApJ...471..643K
4. 1996 Ryan, Sean G.; Norris, John E.; Beers, Timothy C.; Extremely Metal-poor Stars. II. Elemental Abundances and the Early Chemical Enrichment of the Galaxy 1996ApJ...471..254R
5. 1997 Alcock, C.; Allsman, R. A.; Alves, D.; Axelrod, T. S.; Becker, A. C.; Bennett, D. P.; Cook, K. H.; Freeman, K. C.; Griest, K.; Guern, J.; Lehner, M. J.; Marshall, S. L.; Peterson, B. A.; Pratt, M. R.; Quinn, P. J.; Rodgers, A. W.; Stubbs, C. W.; Sutherland, W.; Welch, D. L.; The MACHO Collaboration; The MACHO Project Large Magellanic Cloud Microlensing Results from the First Two Years and the Nature of the Galactic Dark Halo 1997ApJ...486..697A
6. 1997 Alcock, C.; Allsman, R. A.; Alves, D.; Axelrod, T. S.; Bennett, D. P.; Cook, K. H.; Freeman, K. C.; Griest, K.; Guern, J.; Lehner, M. J.; Marshall, S. L.; Park, H.-S.; Perlmutter, S.; Peterson, B. A.; Pratt, M. R.; Quinn, P. J.; Rodgers, A. W.; Stubbs, C. W.; Sutherland, W.; The MACHO Project: 45 Candidate Microlensing Events from the First-Year Galactic Bulge Data 1997ApJ...479..119A
7. 1997 Donati, J.-F.; Semel, M.; Carter, B. D.; Rees, D. E.; Collier Cameron, A.; Spectropolarimetric observations of active stars 1997MNRAS.291..658D
8. 1997 Dressler, Alan; Oemler, Augustus, Jr.; Couch, Warrick J.; Smail, Ian; Ellis, Richard S.; Barger, Amy; Butcher, Harvey; Poggianti, Bianca M.; Sharples, Ray M.; Evolution since $Z = 0.5$ of the Morphology-Density Relation for Clusters of Galaxies 1997ApJ...490..577D
9. 1997 Ellis, Richard S.; Smail, Ian; Dressler, Alan; Couch, Warrick J.; Oemler, Augustus, Jr.; Butcher, Harvey; Sharples, Ray M.; The Homogeneity of Spheroidal Populations in Distant Clusters 1997ApJ...483..582E
10. 1997 Perlmutter, S.; Gabi, S.; Goldhaber, G.; Goobar, A.; Groom, D. E.; Hook, I. M.; Kim, A. G.; Kim, M. Y.; Lee, J. C.; Pain, R.; Pennypacker, C. R.; Small, I. A.; Ellis, R. S.; McMahon, R. G.; Boyle, B. J.; Bunclark, P. S.; Carter, D.; Irwin, M. J.; Glazebrook, K.; Newberg, H. J. M.; Filippenko, A. V.; Matheson, T.; Dopita, M.; Couch, W. J.; The Supernova Cosmology Project; Measurements of the Cosmological Parameters Omega and Lambda from the First Seven Supernovae at $Z \geq 0.35$ 1997ApJ...483..565P
11. 1997 Pettini, Max; Smith, Linda J.; King, David L.; Hunstead, Richard W.; The Metallicity of High-Redshift Galaxies: The Abundance of Zinc in 34 Damped Ly alpha Systems from $z = 0.7$ to 3.4 1997ApJ...486..665P
12. 1998 Couch, Warrick J.; Barger, Amy J.; Smail, Ian; Ellis, Richard S.; Sharples, Ray M.; Morphological Studies of the Galaxy Populations in Distant "Butcher-Oemler" Clusters with the Hubble Space Telescope. II. AC 103, AC 118, and AC 114 at $Z = 0.31$ 1998ApJ...497..188C
13. 1998 Galama, T. J.; Vreeswijk, P. M.; van Paradijs, J.; Kouveliotou, C.; Augusteijn, T.; Bohnhardt, H.; Brewer, J. P.; Doublier, V.; Gonzalez, J.-F.; Leibundgut, B.; Lidman, C.; Hainaut, O. R.; Patat, F.; Heise, J.; in 't Zand, J.; Hurley, K.; Groot, P. J.; Strom, R. G.; Mazzali, P. A.; Iwamoto, K.; Nomoto, K.; Umeda, H.; Nakamura, T.; Young, T. R.; Suzuki, T.; Shigeyama, T.; Koshut, T.; Kippen, M.; Robinson, C.; de Wildt, P.; Wijers, R. A. M.

- J.;Tanvir, N.;Greiner, J.;Pian, E.;Palazzi, E.;Frontera, F.;Masetti, N.;Nicastro, L.;Feroci, M.;Costa, E.;Piro, L.;Peterson, B. A.;Tinney, C.;Boyle, B.;Cannon, R.;Stathakis, R.;Sadler, E.;Begam, M. C.;Ianna, P.; An unusual supernova in the error box of the gamma-ray burst of 25 April 1998. 1998Natur.395..670G
14. 1998 Garnavich, P. M.; Kirshner, R. P.;Challis, P.;Tonry, J.;Gilliland, R. L.;Smith, R. C.;Clocchiatti, A.;Diercks, A.;Filippenko, A. V.;Hamuy, M.;Hogan, C. J.;Leibundgut, B.;Phillips, M. M.;Reiss, D.;Riess, A. G.;Schmidt, B. P.;Schommer, R. A.;Spyromilio, J.;Stubbs, C.;Suntzeff, N. B.;Wells, L.; Constraints on Cosmological Models from Hubble Space Telescope Observations of High-z Supernovae 1998ApJ...493L..53G
 15. 1998 Garnavich, Peter M.; Jha, Saurabh;Challis, Peter;Clocchiatti, Alejandro;Diercks, Alan;Filippenko, Alexei V.;Gilliland, Ron L.;Hogan, Craig J.;Kirshner, Robert P.;Leibundgut, Bruno;Phillips, M. M.;Reiss, David;Riess, Adam G.;Schmidt, Brian P.;Schommer, Robert A.;Smith, R. Chris;Spyromilio, Jason;Stubbs, Chris;Suntzeff, Nicholas B.;Tonry, John;Carroll, Sean M.; Supernova Limits on the Cosmic Equation of State 1998ApJ...509...74G
 16. 1998 Kulkarni, S. R.; Frail, D. A.;Wieringa, M. H.;Ekers, R. D.;Sadler, E. M.;Wark, R. M.;Higdon, J. L.;Phinney, E. S.;Bloom, J. S.; Radio emission from the unusual supernova 1998bw and its association with the gamma-ray burst of 25 April 1998. 1998Natur.395..663K
 17. 1998 Lilly, Simon; Schade, David;Ellis, Richard;Le Fevre, Olivier;Brinchmann, Jarle;Tresse, Laurence;Abraham, Roberto;Hammer, Francois;Crampton, David;Colless, Matthew;Glazebrook, Karl;Mallen-Ornelas, Gabriela;Broadhurst, Thomas; Hubble Space Telescope Imaging of the CFRS and LDSS Redshift Surveys. II. Structural Parameters and the Evolution of Disk Galaxies to Z approximately 1 1998ApJ...500...75L
 18. 1998 Riess, Adam G.; Filippenko, Alexei V.;Challis, Peter;Clocchiatti, Alejandro;Diercks, Alan;Garnavich, Peter M.;Gilliland, Ron L.;Hogan, Craig J.;Jha, Saurabh;Kirshner, Robert P.;Leibundgut, B.;Phillips, M. M.;Reiss, David;Schmidt, Brian P.;Schommer, Robert A.;Smith, R. Chris;Spyromilio, J.;Stubbs, Christopher;Suntzeff, Nicholas B.;Tonry, John; Observational Evidence from Supernovae for an Accelerating Universe and a Cosmological Constant 1998AJ....116.1009R
 19. 1998 Schmidt, Brian P.; Suntzeff, Nicholas B.;Phillips, M. M.;Schommer, Robert A.;Clocchiatti, Alejandro;Kirshner, Robert P.;Garnavich, Peter;Challis, Peter;Leibundgut, B.;Spyromilio, J.;Riess, Adam G.;Filippenko, Alexei V.;Hamuy, Mario;Smith, R. Chris;Hogan, Craig;Stubbs, Christopher;Diercks, Alan;Reiss, David;Gilliland, Ron;Tonry, John;Maza, José;Dressler, A.;Walsh, J.;Ciardullo, R. ; The High-Z Supernova Search: Measuring Cosmic Deceleration and Global Curvature of the Universe Using Type IA Supernovae 1998ApJ...507...46S
 20. 1998 Sreekumar, P.; Bertsch, D. L.;Dingus, B. L.;Esposito, J. A.;Fichtel, C. E.;Hartman, R. C.;Hunter, S. D.;Kanbach, G.;Kniffen, D. A.;Lin, Y. C.;Mayer-Hasselwander, H. A.;Michelson, P. F.;von Montigny, C.;Muecke, A.;Mukherjee, R.;Nolan, P. L.;Pohl, M.;Reimer, O.;Schneid, E.;Stacy, J. G.;Stecker, F. W.;Thompson, D. J.;Willis, T. D.; EGRET Observations of the Extragalactic Gamma-Ray Emission 1998ApJ...494..523S
 21. 1999 Dressler, Alan; Smail, Ian;Poggianti, Bianca M.;Butcher, Harvey;Couch, Warrick J.;Ellis, Richard S.;Oemler, Augustus, Jr.; A Spectroscopic Catalog of 10 Distant Rich Clusters of Galaxies 1999ApJS..122...51D
 22. 1999 Folkes, Simon; Ronen, Shai;Price, Ian;Lahav, Ofer;Colless, Matthew;Maddox, Steve;Deeley, Kathryn;Glazebrook, Karl;Bland-Hawthorn, Joss;Cannon, Russell;Cole, Shaun;Collins, Chris;Couch, Warrick;Driver, Simon P.;Dalton, Gavin;Efstathiou, George;Ellis, Richard S.;Frenk, Carlos S.;Kaiser, Nick;Lewis, Ian;Lumsden, Stuart;Peacock, John;Peterson, Bruce A.;Sutherland, Will;Taylor, Keith; The 2dF Galaxy Redshift Survey: spectral types and luminosity functions 1999MNRAS.308..459F
 23. 1999 Glazebrook, Karl; Blake, Chris;Economou, Frossie;Lilly, Simon;Colless, Matthew ; Measurement of the star formation rate from H α in field galaxies at z=1 1999MNRAS.306..843G
 24. 1999 Harrison, F. A.; Bloom, J. S.;Frail, D. A.;Sari, R.;Kulkarni, S. R.;Djorgovski, S. G.;Axelrod, T.;Mould, J.;Schmidt, B. P.;Wieringa, M. H.;Wark, R. M.;Subrahmanyam,

- R.;McConnell, D.;McCarthy, P. J.;Schaefer, B. E.;McMahon, R. G.;Markze, R. O.;Firth, E.;Soffitta, P.;Amati, L.; Optical and Radio Observations of the Afterglow from GRB 990510: Evidence for a Jet 1999ApJ...523L.121H
25. 1999 Hartman, R. C.; Bertsch, D. L.;Bloom, S. D.;Chen, A. W.;Deines-Jones, P.;Esposito, J. A.;Fichtel, C. E.;Friedlander, D. P.;Hunter, S. D.;McDonald, L. M.;Sreekumar, P.;Thompson, D. J.;Jones, B. B.;Lin, Y. C.;Michelson, P. F.;Nolan, P. L.;Tompkins, W. F.;Kanbach, G.;Mayer-Hasselwander, H. A.;Mücke, A.;Pohl, M.;Reimer, O.;Kniffen, D. A.;Schneid, E. J.;von Montigny, C.;Mukherjee, R.;Dingus, B. L.; The Third EGRET Catalog of High-Energy Gamma-Ray Sources 1999ApJS..123...79H
 26. 1999 Perlmutter, S.; Aldering, G.;Goldhaber, G.;Knop, R. A.;Nugent, P.;Castro, P. G.;Deustua, S.;Fabbro, S.;Goobar, A.;Groom, D. E.;Hook, I. M.;Kim, A. G.;Kim, M. Y.;Lee, J. C.;Nunes, N. J.;Pain, R.;Pennypacker, C. R.;Quimby, R.;Lidman, C.;Ellis, R. S.;Irwin, M.;McMahon, R. G.;Ruiz-Lapuente, P.;Walton, N.;Schaefer, B.;Boyle, B. J.;Filippenko, A. V.;Matheson, T.;Fruchter, A. S.;Panagia, N.;Newberg, H. J. M.;Couch, W. J.;The Supernova Cosmology Project ; Measurements of Omega and Lambda from 42 High-Redshift Supernovae 1999ApJ...517..565P
 27. 1999 Poggianti, Bianca M.; Smail, Ian;Dressler, Alan;Couch, Warrick J.;Barger, Amy J.;Butcher, Harvey;Ellis, Richard S.;Oemler, Augustus, Jr.; The Star Formation Histories of Galaxies in Distant Clusters 1999ApJ...518..576P
 28. 1999 Webb, John K.; Flambaum, Victor V.;Churchill, Christopher W.;Drinkwater, Michael J.;Barrow, John D.; Search for Time Variation of the Fine Structure Constant 1999PhRvL..82..884W
 29. 1999 Woosley, S. E.; Eastman, Ronald G.;Schmidt, Brian P.; Gamma-Ray Bursts and Type IC Supernova SN 1998BW 1999ApJ...516..788W
 30. 2000 Boyle, B. J.; Shanks, T.;Croom, S. M.;Smith, R. J.;Miller, L.;Loaring, N.;Heymans, C.; The 2dF QSO Redshift Survey - I. The optical luminosity function of quasi-stellar objects 2000MNRAS.317.1014B
 31. 2000 Ferrarese, Laura; Mould, Jeremy R.;Kennicutt, Robert C., Jr.;Huchra, John;Ford, Holland C.;Freedman, Wendy L.;Stetson, Peter B.;Madore, Barry F.;Sakai, Shoko;Gibson, Brad K.;Graham, John A.;Hughes, Shaun M.;Illingworth, Garth D.;Kelson, Daniel D.;Macri, Lucas;Sebo, Kim;Silbermann, N. A.; The Hubble Space Telescope Key Project on the Extragalactic Distance Scale. XXVI. The Calibration of Population II Secondary Distance Indicators and the Value of the Hubble Constant 2000ApJ...529..745F
 32. 2000 Markevitch, M.; Ponman, T. J.;Nulsen, P. E. J.;Bautz, M. W.;Burke, D. J.;David, L. P.;Davis, D.;Donnelly, R. H.;Forman, W. R.;Jones, C.;Kaastra, J.;Kellogg, E.;Kim, D.-W.;Kolodziejczak, J.;Mazzotta, P.;Pagliaro, A.;Patel, S.;Van Speybroeck, L.;Vikhlinin, A.;Vrtilek, J.;Wise, M.;Zhao, P.; Chandra Observation of Abell 2142: Survival of Dense Subcluster Cores in a Merger 2000ApJ...541..542M
 33. 2000 McNamara, B. R.; Wise, M.;Nulsen, P. E. J.;David, L. P.;Sarazin, C. L.;Bautz, M.;Markevitch, M.;Vikhlinin, A.;Forman, W. R.;Jones, C.;Harris, D. E.; Chandra X-Ray Observations of the Hydra A Cluster: An Interaction between the Radio Source and the X-Ray-emitting Gas 2000ApJ...534L.135M
 34. 2000 Mould, Jeremy R.; Huchra, John P.;Freedman, Wendy L.;Kennicutt, Robert C., Jr.;Ferrarese, Laura;Ford, Holland C.;Gibson, Brad K.;Graham, John A.;Hughes, Shaun M. G.;Illingworth, Garth D.;Kelson, Daniel D.;Macri, Lucas M.;Madore, Barry F.;Sakai, Shoko;Sebo, Kim M.;Silbermann, Nancy A.;Stetson, Peter B.; The Hubble Space Telescope Key Project on the Extragalactic Distance Scale. XXVIII. Combining the Constraints on the Hubble Constant 2000ApJ...529..786M
 35. 2000 Wu, K. K. S.; Fabian, A. C.;Nulsen, P. E. J.; Non-gravitational heating in the hierarchical formation of X-ray clusters 2000MNRAS.318..889W
 36. 2000 van den Bosch, Frank C.; Robertson, Brant E.;Dalcanton, Julianne J.;de Blok, W. J. G. ; Constraints on the Structure of Dark Matter Halos from the Rotation Curves of Low Surface Brightness Galaxies 2000AJ....119.1579V
 37. 2001 Barnes, D. G.; Staveley-Smith, L.;de Blok, W. J. G.;Oosterloo, T.;Stewart, I. M.;Wright, A. E.;Banks, G. D.;Bhathal, R.;Boyce, P. J.;Calabretta, M. R.;Disney, M.

- J.;Drinkwater, M. J.;Ekers, R. D.;Freeman, K. C.;Gibson, B. K.;Green, A. J.;Haynes, R. F.;te Lintel Hekkert, P.;Henning, P. A.;Jerjen, H.;Juraszek, S.;Kesteven, M. J.;Kilborn, V. A.;Knezek, P. M.;Koribalski, B.;Kraan-Korteweg, R. C.;Malin, D. F.;Marquarding, M.;Minchin, R. F.;Mould, J. R.;Price, R. M.;Putman, M. E.;Ryder, S. D.;Sadler, E. M.;Schröder, A.;Stootman, F.;Webster, R. L.;Wilson, W. E.;Ye, T.; The Hi Parkes All Sky Survey: southern observations, calibration and robust imaging 2001MNRAS.322..486B
38. 2001 Cole, Shaun; Norberg, Peder;Baugh, Carlton M.;Frenk, Carlos S.;Bland-Hawthorn, Joss;Bridges, Terry;Cannon, Russell;Colless, Matthew;Collins, Chris;Couch, Warrick;Cross, Nicholas;Dalton, Gavin;De Propriis, Roberto;Driver, Simon P.;Efstathiou, George;Ellis, Richard S.;Glazebrook, Karl;Jackson, Carole;Lahav, Ofer;Lewis, Ian;Lumsden, Stuart;Maddox, Steve;Madgwick, Darren;Peacock, John A.;Peterson, Bruce A.;Sutherland, Will;Taylor, Keith; The 2dF galaxy redshift survey: near-infrared galaxy luminosity functions 2001MNRAS.326..255C
39. 2001 Colless, Matthew; Dalton, Gavin;Maddox, Steve;Sutherland, Will;Norberg, Peder;Cole, Shaun;Bland-Hawthorn, Joss;Bridges, Terry;Cannon, Russell;Collins, Chris;Couch, Warrick;Cross, Nicholas;Deeley, Kathryn;De Propriis, Roberto;Driver, Simon P.;Efstathiou, George;Ellis, Richard S.;Frenk, Carlos S.;Glazebrook, Karl;Jackson, Carole;Lahav, Ofer;Lewis, Ian;Lumsden, Stuart;Madgwick, Darren;Peacock, John A.;Peterson, Bruce A.;Price, Ian;Seaborne, Mark;Taylor, Keith; The 2dF Galaxy Redshift Survey: spectra and redshifts 2001MNRAS.328.1039C
40. 2001 Croom, S. M.; Smith, R. J.;Boyle, B. J.;Shanks, T.;Loaring, N. S.;Miller, L.;Lewis, I. J.; The 2dF QSO Redshift Survey - V. The 10k catalogue 2001MNRAS.322L..29C
41. 2001 David, L. P.; Nulsen, P. E. J.;McNamara, B. R.;Forman, W.;Jones, C.;Ponman, T.;Robertson, B.;Wise, M.; A High-Resolution Study of the Hydra A Cluster with Chandra: Comparison of the Core Mass Distribution with Theoretical Predictions and Evidence for Feedback in the Cooling Flow 2001ApJ...557..546D
42. 2001 Fabian, A. C.; Mushotzky, R. F.;Nulsen, P. E. J.;Peterson, J. R.; On the soft X-ray spectrum of cooling flows 2001MNRAS.321L..20F
43. 2001 Frail, D. A.; Kulkarni, S. R.;Sari, R.;Djorgovski, S. G.;Bloom, J. S.;Galama, T. J.;Reichart, D. E.;Berger, E.;Harrison, F. A.;Price, P. A.;Yost, S. A.;Diercks, A.;Goodrich, R. W.;Chaffee, F.; Beaming in Gamma-Ray Bursts: Evidence for a Standard Energy Reservoir 2001ApJ...562L..55F
44. 2001 Freedman, Wendy L.; Madore, Barry F.;Gibson, Brad K.;Ferrarese, Laura;Kelson, Daniel D.;Sakai, Shoko;Mould, Jeremy R.;Kennicutt, Robert C., Jr.;Ford, Holland C.;Graham, John A.;Huchra, John P.;Hughes, Shaun M. G.;Illingworth, Garth D.;Macri, Lucas M.;Stetson, Peter B.; Final Results from the Hubble Space Telescope Key Project to Measure the Hubble Constant 2001ApJ...553...47F
45. 2001 Ibata, Rodrigo; Lewis, Geraint F.;Irwin, Michael;Totten, Edward;Quinn, Thomas ; Great Circle Tidal Streams: Evidence for a Nearly Spherical Massive Dark Halo around the Milky Way 2001ApJ...551..294I
46. 2001 McNamara, B. R.; Wise, M. W.;Nulsen, P. E. J.;David, L. P.;Carilli, C. L.;Sarazin, C. L.;O'Dea, C. P.;Houck, J.;Donahue, M.;Baum, S.;Voit, M.;O'Connell, R. W.;Koekemoer, A.; Discovery of Ghost Cavities in the X-Ray Atmosphere of Abell 2597 2001ApJ...562L.149M
47. 2001 Norberg, Peder; Baugh, Carlton M.;Hawkins, Ed;Maddox, Steve;Peacock, John A.;Cole, Shaun;Frenk, Carlos S.;Bland-Hawthorn, Joss;Bridges, Terry;Cannon, Russell;Colless, Matthew;Collins, Chris;Couch, Warrick;Dalton, Gavin;De Propriis, Roberto;Driver, Simon P.;Efstathiou, George;Ellis, Richard S.;Glazebrook, Karl;Jackson, Carole;Lahav, Ofer;Lewis, Ian;Lumsden, Stuart;Madgwick, Darren;Peterson, Bruce A.;Sutherland, Will;Taylor, Keith; The 2dF Galaxy Redshift Survey: luminosity dependence of galaxy clustering 2001MNRAS.328...64N
48. 2001 Peacock, John A.; Cole, Shaun;Norberg, Peder;Baugh, Carlton M.;Bland-Hawthorn, Joss;Bridges, Terry;Cannon, Russell D.;Colless, Matthew;Collins, Chris;Couch, Warrick;Dalton, Gavin;Deeley, Kathryn;De Propriis, Roberto;Driver, Simon P.;Efstathiou, George;Ellis, Richard S.;Frenk, Carlos S.;Glazebrook, Karl;Jackson, Carole;Lahav, Ofer;Lewis, Ian;Lumsden, Stuart;Maddox, Steve;Percival, Will J.;Peterson, Bruce

- A.;Price, Ian;Sutherland, Will;Taylor, Keith; A measurement of the cosmological mass density from clustering in the 2dF Galaxy Redshift Survey 2001Natur.410..169P
49. 2001 Percival, Will J.; Baugh, Carlton M.;Bland-Hawthorn, Joss;Bridges, Terry;Cannon, Russell;Cole, Shaun;Colless, Matthew;Collins, Chris;Couch, Warrick;Dalton, Gavin;De Propriis, Roberto;Driver, Simon P.;Efstathiou, George;Ellis, Richard S.;Frenk, Carlos S.;Glazebrook, Karl;Jackson, Carole;Lahav, Ofer;Lewis, Ian;Lumsden, Stuart;Maddox, Steve;Moody, Stephen;Norberg, Peder;Peacock, John A.;Peterson, Bruce A.;Sutherland, Will;Taylor, Keith; The 2dF Galaxy Redshift Survey: the power spectrum and the matter content of the Universe 2001MNRAS.327..1297P
 50. 2001 Riess, Adam G.; Nugent, Peter E.;Gilliland, Ronald L.;Schmidt, Brian P.;Tonry, John;Dickinson, Mark;Thompson, Rodger I.;Budavári, Tamás;Casertano, Stefano;Evans, Aaron S.;Filippenko, Alexei V.;Livio, Mario;Sanders, David B.;Shapley, Alice E.;Spinrad, Hyron;Steidel, Charles C.;Stern, Daniel;Surace, Jason;Veilleux, Sylvain ; The Farthest Known Supernova: Support for an Accelerating Universe and a Glimpse of the Epoch of Deceleration 2001ApJ...560...49R
 51. 2001 de Blok, W. J. G.; McGaugh, Stacy S.;Bosma, Albert;Rubin, Vera C.; Mass Density Profiles of Low Surface Brightness Galaxies 2001ApJ...552L..23D
 52. 2001 de Blok, W. J. G.; McGaugh, Stacy S.;Rubin, Vera C.; High-Resolution Rotation Curves of Low Surface Brightness Galaxies. II. Mass Models 2001AJ....122.2396D
 53. 2002 Bloom, J. S.; Kulkarni, S. R.;Price, P. A.;Reichart, D.;Galama, T. J.;Schmidt, B. P.;Frail, D. A.;Berger, E.;McCarthy, P. J.;Chevalier, R. A.;Wheeler, J. C.;Halpern, J. P.;Fox, D. W.;Djorgovski, S. G.;Harrison, F. A.;Sari, R.;Axelrod, T. S.;Kimble, R. A.;Holtzman, J.;Hurley, K.;Frontera, F.;Piro, L.;Costa, E.; Detection of a Supernova Signature Associated with GRB 011121 2002ApJ...572L..45B
 54. 2002 Efstathiou, G.; Moody, Stephen;Peacock, John A.;Percival, Will J.;Baugh, Carlton;Bland-Hawthorn, Joss;Bridges, Terry;Cannon, Russell;Cole, Shaun;Colless, Matthew;Collins, Chris;Couch, Warrick;Dalton, Gavin;de Propriis, Roberto;Driver, Simon P.;Ellis, Richard S.;Frenk, Carlos S.;Glazebrook, Karl;Jackson, Carole;Lahav, Ofer;Lewis, Ian;Lumsden, Stuart;Maddox, Steve;Norberg, Peder;Peterson, Bruce A.;Sutherland, Will;Taylor, Keith; Evidence for a non-zero Lambda and a low matter density from a combined analysis of the 2dF Galaxy Redshift Survey and cosmic microwave background anisotropies 2002MNRAS.330L..29E
 55. 2002 Elgarøy, Ø.; Lahav, O.;Percival, W. J.;Peacock, J. A.;Madgwick, D. S.;Bridle, S. L.;Baugh, C. M.;Baldry, I. K.;Bland-Hawthorn, J.;Bridges, T.;Cannon, R.;Cole, S.;Colless, M.;Collins, C.;Couch, W.;Dalton, G.;de Propriis, R.;Driver, S. P.;Efstathiou, G. P.;Ellis, R. S.;Frenk, C. S.;Glazebrook, K.;Jackson, C.;Lewis, I.;Lumsden, S.;Maddox, S.;Norberg, P.;Peterson, B. A.;Sutherland, W.;Taylor, K.; New Upper Limit on the Total Neutrino Mass from the 2 Degree Field Galaxy Redshift Survey 2002PhRvL..89f1301E
 56. 2002 Lahav, Ofer; Bridle, Sarah L.;Percival, Will J.;Peacock, John A.;Efstathiou, George;Baugh, Carlton M.;Bland-Hawthorn, Joss;Bridges, Terry;Cannon, Russell;Cole, Shaun;Colless, Matthew;Collins, Chris;Couch, Warrick;Dalton, Gavin;de Propriis, Roberto;Driver, Simon P.;Ellis, Richard S.;Frenk, Carlos S.;Glazebrook, Karl;Jackson, Carole;Lewis, Ian;Lumsden, Stuart;Maddox, Steve;Madgwick, Darren S.;Moody, Stephen;Norberg, Peder;Peterson, Bruce A.;Sutherland, Will;Taylor, Keith; The 2dF Galaxy Redshift Survey: the amplitudes of fluctuations in the 2dFGRS and the CMB, and implications for galaxy biasing 2002MNRAS.333..961L
 57. 2002 Lewis, Ian; Balogh, Michael;De Propriis, Roberto;Couch, Warrick;Bower, Richard;Offer, Alison;Bland-Hawthorn, Joss;Baldry, Ivan K.;Baugh, Carlton;Bridges, Terry;Cannon, Russell;Cole, Shaun;Colless, Matthew;Collins, Chris;Cross, Nicholas;Dalton, Gavin;Driver, Simon P.;Efstathiou, George;Ellis, Richard S.;Frenk, Carlos S.;Glazebrook, Karl;Hawkins, Edward;Jackson, Carole;Lahav, Ofer;Lumsden, Stuart;Maddox, Steve;Madgwick, Darren;Norberg, Peder;Peacock, John A.;Percival, Will;Peterson, Bruce A.;Sutherland, Will;Taylor, Keith; The 2dF Galaxy Redshift Survey: the environmental dependence of galaxy star formation rates near clusters 2002MNRAS.334..673L

58. 2002 Madgwick, Darren S.; Lahav, Ofer; Baldry, Ivan K.; Baugh, Carlton M.; Bland-Hawthorn, Joss; Bridges, Terry; Cannon, Russell; Cole, Shaun; Colless, Matthew; Collins, Chris; Couch, Warrick; Dalton, Gavin; De Propriis, Roberto; Driver, Simon P.; Efstathiou, George; Ellis, Richard S.; Frenk, Carlos S.; Glazebrook, Karl; Jackson, Carole; Lewis, Ian; Lumsden, Stuart; Maddox, Steve; Norberg, Peder; Peacock, John A.; Peterson, Bruce A.; Sutherland, Will; Taylor, Keith; The 2dF Galaxy Redshift Survey: galaxy luminosity functions per spectral type 2002MNRAS.333..133M
59. 2002 Norberg, Peder; Baugh, Carlton M.; Hawkins, Ed; Maddox, Steve; Madgwick, Darren; Lahav, Ofer; Cole, Shaun; Frenk, Carlos S.; Baldry, Ivan; Bland-Hawthorn, Joss; Bridges, Terry; Cannon, Russell; Colless, Matthew; Collins, Chris; Couch, Warrick; Dalton, Gavin; De Propriis, Roberto; Driver, Simon P.; Efstathiou, George; Ellis, Richard S.; Glazebrook, Karl; Jackson, Carole; Lewis, Ian; Lumsden, Stuart; Peacock, John A.; Peterson, Bruce A.; Sutherland, Will; Taylor, Keith; The 2dF Galaxy Redshift Survey: the dependence of galaxy clustering on luminosity and spectral type 2002MNRAS.332..827N
60. 2002 Norberg, Peder; Cole, Shaun; Baugh, Carlton M.; Frenk, Carlos S.; Baldry, Ivan; Bland-Hawthorn, Joss; Bridges, Terry; Cannon, Russell; Colless, Matthew; Collins, Chris; Couch, Warrick; Cross, Nicholas J. G.; Dalton, Gavin; De Propriis, Roberto; Driver, Simon P.; Efstathiou, George; Ellis, Richard S.; Glazebrook, Karl; Jackson, Carole; Lahav, Ofer; Lewis, Ian; Lumsden, Stuart; Maddox, Steve; Madgwick, Darren; Peacock, John A.; Peterson, Bruce A.; Sutherland, Will; Taylor, Keith; The 2dF Galaxy Redshift Survey: the bJ-band galaxy luminosity function and survey selection function 2002MNRAS.336..907N
61. 2002 Nulsen, P. E. J.; David, L. P.; McNamara, B. R.; Jones, C.; Forman, W. R.; Wise, M. ; Interaction of Radio Lobes with the Hot Intracluster Medium: Driving Convective Outflow in Hydra A 2002ApJ...568..163N
62. 2002 Percival, Will J.; Sutherland, Will; Peacock, John A.; Baugh, Carlton M.; Bland-Hawthorn, Joss; Bridges, Terry; Cannon, Russell; Cole, Shaun; Colless, Matthew; Collins, Chris; Couch, Warrick; Dalton, Gavin; De Propriis, Roberto; Driver, Simon P.; Efstathiou, George; Ellis, Richard S.; Frenk, Carlos S.; Glazebrook, Karl; Jackson, Carole; Lahav, Ofer; Lewis, Ian; Lumsden, Stuart; Maddox, Steve; Moody, Stephen; Norberg, Peder; Peterson, Bruce A.; Taylor, Keith; Parameter constraints for flat cosmologies from cosmic microwave background and 2dFGRS power spectra 2002MNRAS.337.1068P
63. 2002 Verde, Licia; Heavens, Alan F.; Percival, Will J.; Matarrese, Sabino; Baugh, Carlton M.; Bland-Hawthorn, Joss; Bridges, Terry; Cannon, Russell; Cole, Shaun; Colless, Matthew; Collins, Chris; Couch, Warrick; Dalton, Gavin; De Propriis, Roberto; Driver, Simon P.; Efstathiou, George; Ellis, Richard S.; Frenk, Carlos S.; Glazebrook, Karl; Jackson, Carole; Lahav, Ofer; Lewis, Ian; Lumsden, Stuart; Maddox, Steve; Madgwick, Darren; Norberg, Peder; Peacock, John A.; Peterson, Bruce A.; Sutherland, Will; Taylor, Keith; The 2dF Galaxy Redshift Survey: the bias of galaxies and the density of the Universe 2002MNRAS.335..432V
64. 2002 de Blok, W. J. G.; Bosma, A.; High-resolution rotation curves of low surface brightness galaxies 2002A&A...385..816D
65. 2003 Berger, E.; Kulkarni, S. R.; Pooley, G.; Frail, D. A.; McIntyre, V.; Wark, R. M.; Sari, R.; Soderberg, A. M.; Fox, D. W.; Yost, S.; Price, P. A.; A common origin for cosmic explosions inferred from calorimetry of GRB030329 2003Natur.426..154B
66. 2003 Burgay, M.; D'Amico, N.; Possenti, A.; Manchester, R. N.; Lyne, A. G.; Joshi, B. C.; McLaughlin, M. A.; Kramer, M.; Sarkissian, J. M.; Camilo, F.; Kalogera, V.; Kim, C.; Lorimer, D. R.; An increased estimate of the merger rate of double neutron stars from observations of a highly relativistic system 2003Natur.426..531B
67. 2003 Corbel, S.; Nowak, M. A.; Fender, R. P.; Tzioumis, A. K.; Markoff, S.; Radio/X-ray correlation in the low/hard state of GX 339-4 2003A&A...400.1007C
68. 2003 De Propriis, Roberto; Colless, Matthew; Driver, Simon P.; Couch, Warrick; Peacock, John A.; Baldry, Ivan K.; Baugh, Carlton M.; Bland-Hawthorn, Joss; Bridges, Terry; Cannon, Russell; Cole, Shaun; Collins, Chris; Cross, Nicholas; Dalton, Gavin B.; Efstathiou, George; Ellis, Richard S.; Frenk, Carlos S.; Glazebrook, Karl; Hawkins, Edward; Jackson,

- Carole;Lahav, Ofer;Lewis, Ian;Lumsden, Stuart;Maddox, Steve;Madgwick, Darren S.;Norberg, Peder;Percival, Will;Peterson, Bruce;Sutherland, Will;Taylor, Keith ; The 2dF Galaxy Redshift Survey: the luminosity function of cluster galaxies 2003MNRAS.342..725D
69. 2003 Hawkins, Ed; Maddox, Steve;Cole, Shaun;Lahav, Ofer;Madgwick, Darren S.;Norberg, Peder;Peacock, John A.;Baldry, Ivan K.;Baugh, Carlton M.;Bland-Hawthorn, Joss;Bridges, Terry;Cannon, Russell;Colless, Matthew;Collins, Chris;Couch, Warrick;Dalton, Gavin;De Propriis, Roberto;Driver, Simon P.;Efstathiou, George;Ellis, Richard S.;Frenk, Carlos S.;Glazebrook, Karl;Jackson, Carole;Jones, Bryn;Lewis, Ian;Lumsden, Stuart;Percival, Will;Peterson, Bruce A.;Sutherland, Will;Taylor, Keith ; The 2dF Galaxy Redshift Survey: correlation functions, peculiar velocities and the matter density of the Universe 2003MNRAS.346...78H
70. 2003 Price, P. A.; Fox, D. W.;Kulkarni, S. R.;Peterson, B. A.;Schmidt, B. P.;Soderberg, A. M.;Yost, S. A.;Berger, E.;Djorgovski, S. G.;Frail, D. A.;Harrison, F. A.;Sari, R.;Blain, A. W.;Chapman, S. C.; The bright optical afterglow of the nearby gamma-ray burst of 29 March 2003 2003Natur.423..844P
71. 2003 Tonry, John L.; Schmidt, Brian P.;Barris, Brian;Candia, Pablo;Challis, Peter;Clocchiatti, Alejandro;Coil, Alison L.;Filippenko, Alexei V.;Garnavich, Peter;Hogan, Craig;Holland, Stephen T.;Jha, Saurabh;Kirshner, Robert P.;Krisciunas, Kevin;Leibundgut, Bruno;Li, Weidong;Matheson, Thomas;Phillips, Mark M.;Riess, Adam G.;Schommer, Robert;Smith, R. Chris;Sollerman, Jesper;Spyromilio, Jason;Stubbs, Christopher W.;Suntzeff, Nicholas B.; Cosmological Results from High-z Supernovae 2003ApJ...594....1T
72. 2004 Abbasi, R. U.; Abu-Zayyad, T.;Amann, J. F.;Archbold, G.;Bellido, J. A.;Belov, K.;Belz, J. W.;Bergman, D. R.;Cao, Z.;Clay, R. W.;Cooper, M. D.;Dai, H.;Dawson, B. R.;Everett, A. A.;Fedorova, Yu. A.;Girard, J. H.;Gray, R. C.;Hanlon, W. F.;Hoffman, C. M.;Holscheiter, M. H.;Hüntemeyer, P.;Jones, B. F.;Jui, C. C.;Kieda, D. B.;Kim, K.;Kirm, M. A.;Loh, E. C.;Manago, N.;Marek, L. J.;Martens, K.;Martin, G.;Matthews, J. A.;Matthews, J. N.;Meyer, J. R.;Moore, S. A.;Morrison, P.;Moosman, A. N.;Mumford, J. R.;Munro, M. W.;Painter, C. A.;Perera, L.;Reil, K.;Riehle, R.;Roberts, M.;Sarracino, J. S.;Sasaki, M.;Schnitzer, S. R.;Shen, P.;Simpson, K. M.;Sinnis, G.;Smith, J. D.;Sokolsky, P.;Song, C.;Springer, R. W.;Stokes, B. T.;Taylor, S. F.;Thomas, S. B.;Thompson, T. N.;Thomson, G. B.;Tupa, D.;Westerhoff, S.;Wiencke, L. R.;Vanderveen, T. D.;Zech, A.;Zhang, X. ; Measurement of the Flux of Ultrahigh Energy Cosmic Rays from Monocular Observations by the High Resolution Fly's Eye Experiment 2004PhRvL..92o1101A
73. 2004 Balogh, Michael; Eke, Vince;Miller, Chris;Lewis, Ian;Bower, Richard;Couch, Warrick;Nichol, Robert;Bland-Hawthorn, Joss;Baldry, Ivan K.;Baugh, Carlton;Bridges, Terry;Cannon, Russell;Cole, Shaun;Colless, Matthew;Collins, Chris;Cross, Nicholas;Dalton, Gavin;de Propriis, Roberto;Driver, Simon P.;Efstathiou, George;Ellis, Richard S.;Frenk, Carlos S.;Glazebrook, Karl;Gomez, Percy;Gray, Alex;Hawkins, Edward;Jackson, Carole;Lahav, Ofer;Lumsden, Stuart;Maddox, Steve;Madgwick, Darren;Norberg, Peder;Peacock, John A.;Percival, Will;Peterson, Bruce A.;Sutherland, Will;Taylor, Keith; Galaxy ecology: groups and low-density environments in the SDSS and 2dFGRS 2004MNRAS.348.1355B
74. 2004 Barris, Brian J.; Tonry, John L.;Blondin, Stéphane;Challis, Peter;Chornock, Ryan;Clocchiatti, Alejandro;Filippenko, Alexei V.;Garnavich, Peter;Holland, Stephen T.;Jha, Saurabh;Kirshner, Robert P.;Krisciunas, Kevin;Leibundgut, Bruno;Li, Weidong;Matheson, Thomas;Miknaitis, Gajus;Riess, Adam G.;Schmidt, Brian P.;Smith, R. Chris;Sollerman, Jesper;Spyromilio, Jason;Stubbs, Christopher W.;Suntzeff, Nicholas B.;Aussel, Hervé;Chambers, K. C.;Connelley, M. S.;Donovan, D.;Henry, J. Patrick;Kaiser, Nick;Liu, Michael C.;Martín, Eduardo L.;Wainscoat, Richard J.; Twenty-Three High-Redshift Supernovae from the Institute for Astronomy Deep Survey: Doubling the Supernova Sample at $z > 0.7$ 2004ApJ...602..571B

75. 2004 Bîrzan, L.; Rafferty, D. A.;McNamara, B. R.;Wise, M. W.;Nulsen, P. E. J. ; A Systematic Study of Radio-induced X-Ray Cavities in Clusters, Groups, and Galaxies 2004ApJ...607..800B
76. 2004 Croom, S. M.; Smith, R. J.;Boyle, B. J.;Shanks, T.;Miller, L.;Outram, P. J.;Loaring, N. S.; The 2dF QSO Redshift Survey - XII. The spectroscopic catalogue and luminosity function 2004MNRAS.349.1397C
77. 2004 Eke, V. R.; Baugh, Carlton M.;Cole, Shaun;Frenk, Carlos S.;Norberg, Peder;Peacock, John A.;Baldry, Ivan K.;Bland-Hawthorn, Joss;Bridges, Terry;Cannon, Russell;Colless, Matthew;Collins, Chris;Couch, Warrick;Dalton, Gavin;de Propris, Roberto;Driver, Simon P.;Efstathiou, George;Ellis, Richard S.;Glazebrook, Karl;Jackson, Carole;Lahav, Ofer;Lewis, Ian;Lumsden, Stuart;Maddox, Steve;Madgwick, Darren;Peterson, Bruce A.;Sutherland, Will;Taylor, Keith; Galaxy groups in the 2dFGRS: the group-finding algorithm and the 2PIGG catalogue 2004MNRAS.348..866E
78. 2004 Kalogera, V.; Kim, C.;Lorimer, D. R.;Burgay, M.;D'Amico, N.;Possenti, A.;Manchester, R. N.;Lyne, A. G.;Joshi, B. C.;McLaughlin, M. A.;Kramer, M.;Sarkissian, J. M.;Camilo, F.; The Cosmic Coalescence Rates for Double Neutron Star Binaries 2004ApJ...601L.179K
79. 2004 Lipkin, Y. M.; Ofek, E. O.;Gal-Yam, A.;Leibowitz, E. M.;Poznanski, D.;Kaspi, S.;Polishook, D.;Kulkarni, S. R.;Fox, D. W.;Berger, E.;Mirabal, N.;Halpern, J.;Bureau, M.;Fathi, K.;Price, P. A.;Peterson, B. A.;Frebel, A.;Schmidt, B.;Orosz, J. A.;Fitzgerald, J. B.;Bloom, J. S.;van Dokkum, P. G.;Bailyn, C. D.;Buxton, M. M.;Barsony, M.; The Detailed Optical Light Curve of GRB 030329 2004ApJ...606..381L
80. 2004 Lyne, A. G.; Burgay, M.;Kramer, M.;Possenti, A.;Manchester, R. N.;Camilo, F.;McLaughlin, M. A.;Lorimer, D. R.;D'Amico, N.;Joshi, B. C.;Reynolds, J.;Freire, P. C. C.; A Double-Pulsar System: A Rare Laboratory for Relativistic Gravity and Plasma Physics 2004Sci...303.1153L
81. 2004 Martin, N. F.; Ibata, R. A.;Bellazzini, M.;Irwin, M. J.;Lewis, G. F.;Dehnen, W. ; A dwarf galaxy remnant in Canis Major: the fossil of an in-plane accretion on to the Milky Way 2004MNRAS.348...12M
82. 2004 Soderberg, A. M.; Kulkarni, S. R.;Berger, E.;Fox, D. B.;Price, P. A.;Yost, S. A.;Hunt, M. P.;Frail, D. A.;Walker, R. C.;Hamuy, M.;Shectman, S. A.;Halpern, J. P.;Mirabal, N.; A Redshift Determination for XRF 020903: First Spectroscopic Observations of an X-Ray Flash 2004ApJ...606..994S
83. 2004 Tsuchiya, K.; Enomoto, R.;Ksenofontov, L. T.;Mori, M.;Naito, T.;Asahara, A.;Bicknell, G. V.;Clay, R. W.;Doi, Y.;Edwards, P. G.;Gunji, S.;Hara, S.;Hara, T.;Hattori, T.;Hayashi, Sei.;Itoh, C.;Kabuki, S.;Kajino, F.;Katagiri, H.;Kawachi, A.;Kifune, T.;Kubo, H.;Kurihara, T.;Kurosaka, R.;Kushida, J.;Matsubara, Y.;Miyashita, Y.;Mizumoto, Y.;Moro, H.;Muraishi, H.;Muraki, Y.;Nakase, T.;Nishida, D.;Nishijima, K.;Ohishi, M.;Okumura, K.;Patterson, J. R.;Protheroe, R. J.;Sakamoto, N.;Sakurazawa, K.;Swaby, D. L.;Tanimori, T.;Tanimura, H.;Thornton, G.;Tokanai, F.;Uchida, T.;Watanabe, S.;Yamaoka, T.;Yanagita, S.;Yoshida, T.;Yoshikoshi, T.; Detection of Sub-TeV Gamma Rays from the Galactic Center Direction by CANGAROO-II 2004ApJ...606L.115T