

Top cited papers

http://inspirehep.net/info/hep/stats/topcites/2017/eprints/by_astro-ph_annual.html

1. Cosmological model of the universe

1279 citations by astro-ph eprints in 2017

Planck 2015 results. XIII. Cosmological parameters

[Planck](#) Collaboration ([P.A.R. Ade \(Cardiff U.\) et al.](#)). Feb 5, 2015. 63 pp.

Published in **Astron.Astrophys. 594 (2016) A13**

DOI: [10.1051/0004-6361/201525830](https://doi.org/10.1051/0004-6361/201525830)

e-Print: [arXiv:1502.01589](https://arxiv.org/abs/1502.01589) [astro-ph.CO] | [PDF](#)

424 citations by astro-ph eprints in 2017

Planck 2013 results. XVI. Cosmological parameters

[Planck](#) Collaboration ([P.A.R. Ade \(Cardiff U.\) et al.](#)). Mar 20, 2013. 66 pp.

Published in **Astron.Astrophys. 571 (2014) A16**

CERN-PH-TH-2013-129

DOI: [10.1051/0004-6361/201321591](https://doi.org/10.1051/0004-6361/201321591)

e-Print: [arXiv:1303.5076](https://arxiv.org/abs/1303.5076) [astro-ph.CO] | [PDF](#)

335 citations by astro-ph eprints in 2017

Efficient computation of CMB anisotropies in closed FRW models

[Antony Lewis](#), [Anthony Challinor](#), [Anthony Lasenby \(Cambridge U.\)](#). Nov 1999. 4 pp.

Published in **Astrophys.J. 538 (2000) 473-476**

DOI: [10.1086/309179](https://doi.org/10.1086/309179)

e-Print: [astro-ph/9911177](https://arxiv.org/abs/astro-ph/9911177) | [PDF](#)

296 citations by astro-ph eprints in 2017

Nine-Year Wilkinson Microwave Anisotropy Probe (WMAP) Observations: Cosmological Parameter Results

[WMAP](#) Collaboration ([G. Hinshaw \(British Columbia U.\) et al.](#)). Dec 2012. 25 pp.

Published in **Astrophys.J.Suppl. 208 (2013) 19**

DOI: [10.1088/0067-0049/208/2/19](https://doi.org/10.1088/0067-0049/208/2/19)

e-Print: [arXiv:1212.5226](https://arxiv.org/abs/1212.5226) [astro-ph.CO] | [PDF](#)

219 citations by astro-ph eprints in 2017

Seven-Year Wilkinson Microwave Anisotropy Probe (WMAP) Observations: Cosmological Interpretation

[WMAP](#) Collaboration ([E. Komatsu \(Texas U.\) et al.](#)). Jan 2010. 48 pp.

Published in **Astrophys.J.Suppl. 192 (2011) 18**

DOI: [10.1088/0067-0049/192/2/18](https://doi.org/10.1088/0067-0049/192/2/18)

e-Print: [arXiv:1001.4538](https://arxiv.org/abs/1001.4538) [astro-ph.CO] | [PDF](#)

2. Discovery of gravitational waves

538 citations by astro-ph eprints in 2017

Observation of Gravitational Waves from a Binary Black Hole Merger

LIGO Scientific and Virgo Collaborations ([B.P. Abbott \(Caltech\) et al.](#)). Feb 11, 2016. 16 pp.

Published in **Phys.Rev.Lett. 116 (2016) no.6, 061102**

LIGO-P150914
DOI: 10.1103/PhysRevLett.116.061102
e-Print: arXiv:1602.03837 [gr-qc] | PDF

182 citations by astro-ph eprints in 2017

GW170104: Observation of a 50-Solar-Mass Binary Black Hole Coalescence at Redshift 0.2
[LIGO Scientific](#) and [VIRGO](#) Collaborations ([Benjamin P. Abbott \(LIGO Lab., Caltech\) et al.](#)).
Jun 6, 2017. 17 pp.
Published in **Phys.Rev.Lett.** **118 (2017) no.22, 221101**
LIGO-P170104
DOI: [10.1103/PhysRevLett.118.221101](#)
e-Print: [arXiv:1706.01812](#) [gr-qc] | PDF

177 citations by astro-ph eprints in 2017

GW170817: Observation of Gravitational Waves from a Binary Neutron Star Inspiral
[LIGO Scientific](#) and [Virgo](#) Collaborations ([B. P. Abbott \(LIGO Lab., Caltech\) et al.](#)). Oct 16,
2017. 18 pp.
Published in **Phys.Rev.Lett.** **119 (2017) no.16, 161101**
LIGO-P170817
DOI: [10.1103/PhysRevLett.119.161101](#)
e-Print: [arXiv:1710.05832](#) [gr-qc] | PDF

166 citations by astro-ph eprints in 2017

Binary Black Hole Mergers in the first Advanced LIGO Observing Run
[LIGO Scientific](#) and [Virgo](#) Collaborations ([B.P. Abbott \(Caltech\) et al.](#)). Jun 15, 2016. 36 pp.
Published in **Phys.Rev. X6 (2016) no.4, 041015**
LIGO-P1600088
DOI: [10.1103/PhysRevX.6.041015](#)
e-Print: [arXiv:1606.04856](#) [gr-qc] | PDF

3. Universal dark matter halo

372 citations by astro-ph eprints in 2017

A Universal density profile from hierarchical clustering
[Julio F. Navarro \(Arizona U., Astron. Dept. - Steward Observ.\)](#), [Carlos S. Frenk \(Durham U.\)](#), [Simon D.M. White \(Garching, Max Planck Inst.\)](#). Nov 1996. 16 pp.
Published in **Astrophys.J.** **490 (1997) 493-508**
DOI: [10.1086/304888](#)
e-Print: [astro-ph/9611107](#) | PDF

284 citations by astro-ph eprints in 2017

The Structure of cold dark matter halos
[Julio F. Navarro \(Arizona U., Astron. Dept. - Steward Observ.\)](#), [Carlos S. Frenk \(Durham U.\)](#), [Simon D.M. White \(Garching, Max Planck Inst.\)](#). Aug 1995. 22 pp.
Published in **Astrophys.J.** **462 (1996) 563-575**
DOI: [10.1086/177173](#)
e-Print: [astro-ph/9508025](#) | PDF

4. Black hole accretion

331 citations by astro-ph eprints in 2017

Black holes in binary systems. Observational appearance

[N.I. Shakura \(Sternberg Astron. Inst.\)](#), [R.A. Sunyaev \(Moscow, IPM\)](#). Jun 1972. 19 pp.

Published in **Astron.Astrophys.** **24 (1973) 337-355**

5. Accelerating Universe

331 citations by astro-ph eprints in 2017

Observational evidence from supernovae for an accelerating universe and a cosmological constant

[Supernova Search Team \(Adam G. Riess \(UC, Berkeley, Astron. Dept.\) et al.\)](#). May 1998. 36 pp.

Published in **Astron.J.** **116 (1998) 1009-1038**

DOI: [10.1086/300499](#)

e-Print: [astro-ph/9805201](#) | [PDF](#)

310 citations by astro-ph eprints in 2017

Measurements of Omega and Lambda from 42 high redshift supernovae

[Supernova Cosmology Project Collaboration \(S. Perlmutter \(UC, Berkeley, CfPA\) et al.\)](#). Dec 1998. 33 pp.

Published in **Astrophys.J.** **517 (1999) 565-586**

LBNL-41801, LBL-41801

DOI: [10.1086/307221](#)

e-Print: [astro-ph/9812133](#) | [PDF](#)

242 citations by astro-ph eprints in 2017

Improved cosmological constraints from a joint analysis of the SDSS-II and SNLS supernova samples

[SDSS Collaboration \(M. Betoule \(Paris U., VI-VII\) et al.\)](#). Jan 16, 2014. 32 pp.

Published in **Astron.Astrophys.** **568 (2014) A22**

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DOI: [10.1051/0004-6361/201423413](#)

e-Print: [arXiv:1401.4064 \[astro-ph.CO\]](#) | [PDF](#)

6. Simulating the Universe

325 citations by astro-ph eprints in 2017

The Cosmological simulation code GADGET-2

[Volker Springel \(Garching, Max Planck Inst.\)](#). May 2005. 31 pp.

Published in **Mon.Not.Roy.Astron.Soc.** **364 (2005) 1105-1134**

DOI: [10.1111/j.1365-2966.2005.09655.x](#)

e-Print: [astro-ph/0505010](#) | [PDF](#)

128 citations by astro-ph eprints in 2017

Introducing the Illustris Project: Simulating the coevolution of dark and visible matter in the

Universe

[Mark Vogelsberger \(MIT\)](#), [Shy Genel \(Harvard-Smithsonian Ctr. Astrophys.\)](#), [Volker Springel \(HITS\)](#), [Paul Torrey \(Harvard-Smithsonian Ctr. Astrophys.\)](#), [Debra Sijacki \(Cambridge U., Inst. of Astron.\)](#), [Dandan Xu \(HITS\)](#), [Gregory F. Snyder \(STScI\)](#), [Dylan Nelson](#), [Lars Hernquist \(Harvard-Smithsonian Ctr. Astrophys.\)](#). May 12, 2014. 30 pp.

Published in **Mon.Not.Roy.Astron.Soc.** 444 (2014) no.2, 1518-1547

DOI: [10.1093/mnras/stu1536](https://doi.org/10.1093/mnras/stu1536)

e-Print: [arXiv:1405.2921](https://arxiv.org/abs/1405.2921) [astro-ph.CO] | [PDF](#)

7. Local Hubble Constant – is there a tension?

267 citations by astro-ph eprints in 2017

A 2.4% Determination of the Local Value of the Hubble Constant

[Adam G. Riess \(Johns Hopkins U. & Baltimore, Space Telescope Sci.\) et al.](#). Apr 5, 2016. 31 pp.

Published in **Astrophys.J.** 826 (2016) no.1, 56

DOI: [10.3847/0004-637X/826/1/56](https://doi.org/10.3847/0004-637X/826/1/56)

e-Print: [arXiv:1604.01424](https://arxiv.org/abs/1604.01424) [astro-ph.CO] | [PDF](#)

8. The gamma ray sky

260 citations by astro-ph eprints in 2017

Fermi Large Area Telescope Third Source Catalog

[Fermi-LAT Collaboration \(F. Acero \(DAPNIA, Saclay\) et al.\)](#). Jan 8, 2015. 99 41 pp.

Published in **Astrophys.J.Suppl.** 218 (2015) no.2, 23

DOI: [10.1088/0067-0049/218/2/23](https://doi.org/10.1088/0067-0049/218/2/23)

e-Print: [arXiv:1501.02003](https://arxiv.org/abs/1501.02003) [astro-ph.HE] | [PDF](#)

206 citations by astro-ph eprints in 2017

The Large Area Telescope on the Fermi Gamma-ray Space Telescope Mission

[Fermi-LAT Collaboration \(W.B. Atwood \(UC, Santa Cruz\) et al.\)](#). Feb 2009. 40 pp.

Published in **Astrophys.J.** 697 (2009) 1071-1102

SLAC-PUB-13620

DOI: [10.1088/0004-637X/697/2/1071](https://doi.org/10.1088/0004-637X/697/2/1071)

e-Print: [arXiv:0902.1089](https://arxiv.org/abs/0902.1089) [astro-ph.IM] | [PDF](#)

9. Baryon Acoustic Oscillations

26 citations by astro-ph eprints in 2017

The clustering of galaxies in the SDSS-III Baryon Oscillation Spectroscopic Survey: baryon acoustic oscillations in the Data Releases 10 and 11 Galaxy samples

[BOSS Collaboration \(Lauren Anderson \(Washington U., Seattle, Astron. Dept.\) et al.\)](#). Dec 17, 2013. 39 pp.

Published in **Mon.Not.Roy.Astron.Soc.** 441 (2014) no.1, 24-62

DOI: [10.1093/mnras/stu523](https://doi.org/10.1093/mnras/stu523)

e-Print: [arXiv:1312.4877](https://arxiv.org/abs/1312.4877) [astro-ph.CO] | [PDF](#)

204 citations by astro-ph eprints in 2017

The 6dF Galaxy Survey: Baryon Acoustic Oscillations and the Local Hubble Constant

Florian Beutler ([Western Australia U.](#)), [Chris Blake](#) ([Swinburne U.](#), [Ctr. Astrophys. Supercomput.](#)), [Matthew Colless](#), [D.Heath Jones](#) ([Australian Astron. Observ.](#)), [Lister Staveley-Smith](#) ([Western Australia U.](#)), [Lachlan Campbell](#) ([Western Kentucky U.](#)), [Quentin Parker](#) ([Australian Astron. Observ.](#) & [Macquarie U.](#)), [Will Saunders](#), [Fred Watson](#) ([Australian Astron. Observ.](#)). Jun 2011. 18 pp.

Published in **Mon.Not.Roy.Astron.Soc.** **416** (2011) **3017-3032**

DOI: [10.1111/j.1365-2966.2011.19250.x](#)

e-Print: [arXiv:1106.3366](#) [astro-ph.CO] | [PDF](#)

174 citations by astro-ph eprints in 2017

The Baryon Oscillation Spectroscopic Survey of SDSS-III

[BOSS](#) Collaboration ([Kyle S. Dawson](#) ([Utah U.](#)) *et al.*). Aug 2012. 46 pp.

Published in **Astron.J.** **145** (2013) **10**

DOI: [10.1088/0004-6256/145/1/10](#)

e-Print: [arXiv:1208.0022](#) [astro-ph.CO] | [PDF](#)

173 citations by astro-ph eprints in 2017

Detection of the Baryon Acoustic Peak in the Large-Scale Correlation Function of SDSS Luminous Red Galaxies

[SDSS](#) Collaboration ([Daniel J. Eisenstein](#) ([Arizona U.](#)) *et al.*). Jan 2005. 15 pp.

Published in **Astrophys.J.** **633** (2005) **560-574**

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DOI: [10.1086/466512](#)

e-Print: [astro-ph/0501171](#) | [PDF](#)

173 citations by astro-ph eprints in 2017

The clustering of galaxies in the completed SDSS-III Baryon Oscillation Spectroscopic Survey: cosmological analysis of the DR12 galaxy sample

[BOSS](#) Collaboration ([Shadab Alam](#) ([Carnegie Mellon U.](#)) *et al.*). Jul 11, 2016. 36 pp.

Published in **Mon.Not.Roy.Astron.Soc.** **470** (2017) **no.3, 2617-2652**

DOI: [10.1093/mnras/stx721](#)

e-Print: [arXiv:1607.03155](#) [astro-ph.CO] | [PDF](#)

10. Interstellar medium in X-rays

203 citations by astro-ph eprints in 2017

On the Absorption of X-rays in the interstellar medium

[J. Wilms](#) ([Tubingen U.](#), [IAAT](#)), [A. Allen](#), [R. McCray](#) ([JILA, Boulder](#)). Aug 2000. 11 pp.

Published in **Astrophys.J.** **542** (2000) **914-924**

DOI: [10.1086/317016](#)

e-Print: [astro-ph/0008425](#) | [PDF](#)

11. Population synthesis

202 citations by astro-ph eprints in 2017

Stellar population synthesis at the resolution of 2003

[G. Bruzual](#) ([Merida, CIDA](#)), [Stephane Charlot](#) ([Garching, Max Planck Inst.](#) & [Paris, Inst. Astrophys.](#)). Sep 2003. 35 pp.

Published in **Mon.Not.Roy.Astron.Soc.** **344** (2003) 1000

DOI: [10.1046/j.1365-8711.2003.06897.x](https://doi.org/10.1046/j.1365-8711.2003.06897.x)

e-Print: [astro-ph/0309134](#) | [PDF](#)

12. Simulating quasars, galaxies, and large scale structure

183 citations by astro-ph eprints in 2017

Simulating the joint evolution of quasars, galaxies and their large-scale distribution

[Volker Springel et al.](#). Apr 2005. 42 pp.

Published in **Nature** **435** (2005) 629-636

DOI: [10.1038/nature03597](https://doi.org/10.1038/nature03597)

e-Print: [astro-ph/0504097](#) | [PDF](#)

13. Stellar initial mass function

179 citations by astro-ph eprints in 2017

Galactic stellar and substellar initial mass function

[Gilles Chabrier](#) ([Lyon, Ecole Normale Superieure](#)). Apr 2003. 91 pp.

Published in **Publ.Astron.Soc.Pac.** **115** (2003) 763-796

DOI: [10.1086/376392](https://doi.org/10.1086/376392)

e-Print: [astro-ph/0304382](#) | [PDF](#)

131 citations by astro-ph eprints in 2017

On the variation of the initial mass function

[Pavel Kroupa](#) ([Kiel U., Inst. Theor. Phys. Astrophys.](#)). Sep 2000. 34 pp.

Published in **Mon.Not.Roy.Astron.Soc.** **322** (2001) 231

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125 citations by astro-ph eprints in 2017

The Luminosity function and stellar evolution

[Edwin E. Salpeter](#) ([Australian Natl. U., Canberra](#) & [Cornell U., Astron. Dept.](#)). Jan 1955. 7 pp.

Published in **Astrophys.J.** **121** (1955) 161-167

DOI: [10.1086/145971](https://doi.org/10.1086/145971)

14. The Physics of Jets

162 citations by astro-ph eprints in 2017

Electromagnetic extractions of energy from Kerr black holes

[R.D. Blandford](#), [R.L. Znajek](#) ([Cambridge U., Inst. of Astron.](#)). 1977. 24 pp.

Published in **Mon.Not.Roy.Astron.Soc.** **179** (1977) 433-456

15. Gamma ray bursts

158 citations by astro-ph eprints in 2017

The Swift Gamma-Ray Burst Mission

[Swift Science](#) Collaboration ([N. Gehrels](#) ([NASA, Goddard](#)) *et al.*). May 2004. 38 pp.

Published in **Astrophys.J.** **611** (2004) 1005-1020, Erratum: **Astrophys.J.** **621** (2005) 558

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131 citations by astro-ph eprints in 2017

Short-Duration Gamma-Ray Bursts

[Edo Berger](#) ([Harvard-Smithsonian Ctr. Astrophys.](#)). Nov 11, 2013. 63 pp.

Published in **Ann.Rev.Astron.Astrophys.** **52** (2014) 43-105

DOI: [10.1146/annurev-astro-081913-035926](#)

e-Print: [arXiv:1311.2603](#) [astro-ph.HE] | [PDF](#)

16. Theory of neutron star mergers

153 citations by astro-ph eprints in 2017

Nucleosynthesis, Neutrino Bursts and Gamma-Rays from Coalescing Neutron Stars

[David Eichler](#) ([Ben Gurion U. of Negev](#) & [Maryland U.](#)), [Mario Livio](#) ([Technion](#)), [Tsvi Piran](#) ([Hebrew U.](#) & [Princeton U. Observ.](#)), [David N. Schramm](#) ([Chicago U.](#) & [Fermilab](#)). Mar 1989. 7 pp.

Published in **Nature** **340** (1989) 126-128

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136 citations by astro-ph eprints in 2017

Transient events from neutron star mergers

[Li-Xin Li](#), [Bohdan Paczynski](#). Jul 1998. 13 pp.

Published in **Astrophys.J.** **507** (1998) L59

POPE-772

DOI: [10.1086/311680](#)

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17. Unified model of active galactic nuclei (supermassive black holes)

145 citations by astro-ph eprints in 2017

Unified schemes for radio-loud active galactic nuclei

[C.Megan Urry](#) ([Baltimore, Space Telescope Sci.](#)), [Paolo Padovani](#) ([Rome U., Tor Vergata](#)). Jun 1995. 88 pp.

Published in **Publ.Astron.Soc.Pac.** **107** (1995) 803

DOI: [10.1086/133630](#)

e-Print: [astro-ph/9506063](#) | [PDF](#)

18. Supermassive black hole and galaxy coevolution

44 citations by astro-ph eprints in 2017

Coevolution (Or Not) of Supermassive Black Holes and Host Galaxies

[John Kormendy](#), [Luis C. Ho](#). Apr 29, 2013. 143 pp.

Published in **Ann.Rev.Astron.Astrophys.** **51 (2013) 511-653**

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e-Print: [arXiv:1304.7762](https://arxiv.org/abs/1304.7762) [astro-ph.CO] | [PDF](#)

19. Gravitational weak lensing

142 citations by astro-ph eprints in 2017

KiDS-450: Cosmological parameter constraints from tomographic weak gravitational lensing

[H. Hildebrandt et al.](#). Jun 16, 2016. 48 pp.

Published in **Mon.Not.Roy.Astron.Soc.** **465 (2017) 1454**

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e-Print: [arXiv:1606.05338](https://arxiv.org/abs/1606.05338) [astro-ph.CO] | [PDF](#)

134 citations by astro-ph eprints in 2017

Weak gravitational lensing

[Matthias Bartelmann](#), [Peter Schneider](#) ([Garching, Max Planck Inst.](#)). Dec 1999. 223 pp.

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e-Print: [astro-ph/9912508](https://arxiv.org/abs/astro-ph/9912508) | [PDF](#)

20. Star formation history

134 citations by astro-ph eprints in 2017

Cosmic Star Formation History

[Piero Madau](#), [Mark Dickinson](#). Feb 28, 2014. 72 pp.

Published in **Ann.Rev.Astron.Astrophys.** **52 (2014) 415-486**

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e-Print: [arXiv:1403.0007](https://arxiv.org/abs/1403.0007) [astro-ph.CO] | [PDF](#)

130 citations by astro-ph eprints in 2017

The Average Star Formation Histories of Galaxies in Dark Matter Halos from $z=0-8$

[Peter S. Behroozi](#), [Risa H. Wechsler](#), [Charlie Conroy](#). Jul 2012. 36 pp.

Published in **Astrophys.J.** **770 (2013) 57**

DOI: [10.1088/0004-637X/770/1/57](https://doi.org/10.1088/0004-637X/770/1/57)

e-Print: [arXiv:1207.6105](https://arxiv.org/abs/1207.6105) [astro-ph.CO] | [PDF](#)

21. Discovery of fast radio bursts

123 citations by astro-ph eprints in 2017

A bright millisecond radio burst of extragalactic origin

[D.R. Lorimer](#), [M. Bailes](#), [M.A. McLaughlin](#), [D.J. Narkevic](#), [F. Crawford](#). Sep 2007. 18 pp.

Published in **Science** **318 (2007) 777**

DOI: [10.1126/science.1147532](https://doi.org/10.1126/science.1147532)

e-Print: [arXiv:0709.4301](https://arxiv.org/abs/0709.4301) [astro-ph] | [PDF](#)

22. The missing satellite problem

112 citations by astro-ph eprints in 2017

Where are the missing Galactic satellites?

[Anatoly A. Klypin](#), [Andrey V. Kravtsov](#), [Octavio Valenzuela](#) ([New Mexico State U.](#)), [Francisco Prada](#) ([Observ. Astron. Natl., Ensenada](#)). Jan 1999. 10 pp.

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e-Print: [astro-ph/9901240](https://arxiv.org/abs/astro-ph/9901240) | [PDF](#)