

# NS2102: Astrobiology and Astrophysics

[View Online](#)

1.

Gilmour, Iain, Sephton, Mark A., Conway, Andrew, Open University. An introduction to astrobiology. Cambridge: Cambridge University Press/Open University Press; 2004.

2.

Plaxco, Kevin W., Gross, Michael. Astrobiology: a brief introduction. 2nd ed. Baltimore, Mass: Johns Hopkins University Press; 2011.

3.

Grotzinger, John P., Jordan, Thomas H. Understanding earth. 6th ed. New York: W. H. Freeman; 2010.

4.

Tipler, Paul A., Mosca, Gene P. Physics for scientists and engineers: with modern physics [Internet]. 6th ed. New York, NY: W.H. Freeman; 2008. Available from:  
<https://bibliu.com/app/#/view/books/9781319155988/pdf2htmlex/index.html>

5.

Reece, Jane B., Campbell, Neil A. Biology [Internet]. 9th ed. Boston: Pearson Education; 2011. Available from:  
[http://le.alma.exlibrisgroup.com/view/action/uresolver.do?operation=resolveService&page\\_service\\_id=5663610340002746&institutionId=2746&customerId=2745](http://le.alma.exlibrisgroup.com/view/action/uresolver.do?operation=resolveService&page_service_id=5663610340002746&institutionId=2746&customerId=2745)

6.

Brooker, Robert J. Biology. 2nd ed. New York: McGraw-Hill Higher Education; 2010.

7.

Raven, Peter H., Johnson, George B., Mason, Kenneth A., Losos, Jonathan B., Singer, Susan R. Biology. 10th ed. New York, NY: McGraw-Hill; 2014.

8.

Barton, Nicholas H. Evolution. Cold Spring Harbor, N.Y.: Cold Spring Harbor Laboratory Press; 2007.

9.

Burrows, Andrew. Chemistry3: introducing inorganic, organic and physical chemistry [Internet]. Oxford: Oxford University Press; 2009. Available from:  
<https://bibliu.com/app/#/view/books/9780192529893 epub/OEBPS/contents.html>

10.

Brown, Theodore L. Chemistry: the central science. 12th ed. Boston [Mass.]: Prentice Hall; 2012.

11.

Zumdahl, Steven S. Chemical principles [Internet]. 6th ed. Belmont, Calif: Brooks/Cole; 2009. Available from:  
[http://le.alma.exlibrisgroup.com/view/action/uresolver.do?operation=resolveService&package\\_service\\_id=5663963920002746&institutionId=2746&customerId=2745](http://le.alma.exlibrisgroup.com/view/action/uresolver.do?operation=resolveService&package_service_id=5663963920002746&institutionId=2746&customerId=2745)

12.

Averill, Bruce, Eldredge, Patricia. Chemistry: principles, patterns, and applications. International ed. San Francisco, Calif: Pearson Benjamin Cummings; 2007.

13.

Housecroft, Catherine E., Constable, Edwin C. Chemistry: an introduction to organic,

inorganic and physical chemistry. 4th ed. Harlow: Prentice Hall; 2010.

14.

Carroll, Bradley W., Ostlie, Dale A. An introduction to modern astrophysics. 2nd International ed. San Francisco: Pearson Addison-Wesley; 2007.

15.

Freedman, Roger A., Geller, Robert M., Kaufmann, William J. Universe. 9th ed. New York, NY: W.H. Freeman; 2011.

16.

Charbonneau D, Brown TM, Latham DW, Mayor M. Detection of Planetary Transits Across a Sun-like Star. *The Astrophysical Journal*. 2000 Jan 20;529(1):L45–8.

17.

Microbial growth at hyperaccelerations up to  $403,627 \times g$ . 10AD;108(19). Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3093466/?tool=pmcentrez&rendertype=abstract>

18.

Di Giulio M. Biological evidence against the panspermia theory. *Journal of Theoretical Biology*. 2010 Oct;266(4):569–72.

19.

Gislason SR, Oelkers EH, Eiriksdottir ES, Kardjilov MI, Gisladottir G, Sigfusson B, et al. Direct evidence of the feedback between climate and weathering. *Earth and Planetary Science Letters*. 2009 Jan;277(1-2):213-22.

20.

Kasting J. Habitable Zones around Main Sequence Stars. *Icarus*. 1993 Jan;101(1):108–28.

21.

Kallenbach R, Benz W, Lugmair G. Introduction: Timescales for the Formation of Terrestrial Planets. In: Benz W, Kallenbach R, Lugmair GW, editors. From dust to terrestrial planets. Space Sciences Series of ISSI: Springer Science+Business Media, B.V.; 2012.

22.

Lineweaver CH. The Galactic Habitable Zone and the Age Distribution of Complex Life in the Milky Way. *Science*. 2004 Jan 2;303(5654):59–62.

23.

Lissauer J. The Outer Planets and their Moons: Formation of the Outer Planets. In: The outer planets and their moons: comparative studies of the outer planets prior to the exploration of the Saturn system by Cassini-Huygens : volume resulting from an ISSI workshop, 12-16 January 2004, Bern, Switzerland [Internet]. Space Sciences Series of ISSI: Springer; 2005. Available from:  
<https://ebookcentral.proquest.com/lib/leicester/detail.action?docID=303249>

24.

Thommes EW, Matsumura S, Rasio FA. Gas Disks to Gas Giants: Simulating the Birth of Planetary Systems. *Science*. 2008 Aug 8;321(5890):814–7.

25.

Carl Sagan. A search for life on Earth from the Galileo spacecraft. *Nature* [Internet]. 1993 Oct 21;365(6448). Available from:  
[http://gl9sn3dh2u.search.serialssolutions.com/?ctx\\_ver=Z39.88-2004&ctx\\_enc=info%253Aofi%252Fenc%253AUTF-8&rfr\\_id=info:sid/summon.serialssolutions.com&rft\\_val\\_fmt=info:ofi/fmt:kev:mtx;journal&rft.genre=article&rft.atitle=A+search+for+life+on+Earth+from+the+Galileo+spacecraft&rft.jtitle=Nature&rft.au=Carl+Sagan&rft.au=W+Reid+Thompson&rft.au=Robert+Carlson&rft.au=Donald+Gurnett&rft.date=1993-10-21&rft.pub=Nature+Publishing+Group&rft.issn=0028-0836&rft.eissn=1476-4687&rft.volume=365&rft.issue=6448&rft.spage=715&rft.externalDocID=1033560451&paramdict=en-US](http://gl9sn3dh2u.search.serialssolutions.com/?ctx_ver=Z39.88-2004&ctx_enc=info%253Aofi%252Fenc%253AUTF-8&rfr_id=info:sid/summon.serialssolutions.com&rft_val_fmt=info:ofi/fmt:kev:mtx;journal&rft.genre=article&rft.atitle=A+search+for+life+on+Earth+from+the+Galileo+spacecraft&rft.jtitle=Nature&rft.au=Carl+Sagan&rft.au=W+Reid+Thompson&rft.au=Robert+Carlson&rft.au=Donald+Gurnett&rft.date=1993-10-21&rft.pub=Nature+Publishing+Group&rft.issn=0028-0836&rft.eissn=1476-4687&rft.volume=365&rft.issue=6448&rft.spage=715&rft.externalDocID=1033560451&paramdict=en-US)

26.

Alonso Ricardo. ORIGIN OF LIFE ON EARTH. *Scientific American* [Internet]. 2009 Sep

1;301(3). Available from:

[http://gl9sn3dh2u.search.serialssolutions.com/?ctx\\_ver=Z39.88-2004&ctx\\_enc=info%253Aofi%252Fenc%253AUTF-8&rfr\\_id=info:sid/summon.serialssolutions.com&rft\\_val\\_fmt=info:ofi/fmt:kev:mtx:journal&rft.genre=article&rft.atitle=ORIGIN+OF+LIFE+ON+EARTH&rft.jtitle=Scientific+American&rft.au=Alonso+Ricardo&rft.au=Jack+W+Szostak&rft.date=2009-09-01&rft.pub=Scientific+American%252C+Incorporated&rft.issn=0036-8733&rft.eissn=1946-7087&rft.volume=301&rft.issue=3&rft.spage=54&rft.externalDocID=1851532311&paramdict=en-US](http://gl9sn3dh2u.search.serialssolutions.com/?ctx_ver=Z39.88-2004&ctx_enc=info%253Aofi%252Fenc%253AUTF-8&rfr_id=info:sid/summon.serialssolutions.com&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&rft.genre=article&rft.atitle=ORIGIN+OF+LIFE+ON+EARTH&rft.jtitle=Scientific+American&rft.au=Alonso+Ricardo&rft.au=Jack+W+Szostak&rft.date=2009-09-01&rft.pub=Scientific+American%252C+Incorporated&rft.issn=0036-8733&rft.eissn=1946-7087&rft.volume=301&rft.issue=3&rft.spage=54&rft.externalDocID=1851532311&paramdict=en-US)

27.

Canganella F, Wiegel J. Extremophiles: from abyssal to terrestrial ecosystems and possibly beyond. *Naturwissenschaften*. 2011 Apr;98(4):253-79.

28.

Wickramasinghe NC, Trevors JT. Non-terrestrial origin of life: a transformative research paradigm shift. *Theory in Biosciences*. 2013 Jun;132(2):133-7.

29.

Bada JL. New insights into prebiotic chemistry from Stanley Miller's spark discharge experiments. 42:2186-96. Available from:  
<http://pubs.rsc.org/en/content/articlepdf/2013/cs/c3cs35433d>

30.

The Evolution of Organelles [Internet]. Available from:  
<http://www.sumanasinc.com/webcontent/animations/content/organelles.html>

31.

Panspermia (wikipedia) [Internet]. Available from: <https://en.wikipedia.org/wiki/Panspermia>

32.

Berg, Jeremy M., Tymoczko, John L., Stryer, Lubert. Biochemistry [Internet]. 7th ed. New York: W. H. Freeman; 2011. Available from:  
<https://bibliu.com/users/saml/samlLeicester?RelayState=eyJjdXN0b21fbGF1bmNoX3VybCI6>

liMvdmlldy9ib29rcy85NzgxMzE5MjQ4MDYyL2VwdWlvT0VCUFMveGh0bWwvYmVyXzk3ODE  
zMTkxMTQ2NzFfY29udGVudHMuaHRtbCJ9

33.

Nelson, David L., Cox, Michael M., Lehninger, Albert L. Lehninger principles of biochemistry [Internet]. 6th ed. New York, N.Y.: W.H. Freeman; 2013. Available from:  
<https://bibliu.com/users/saml/samlLeicester?RelayState=eyJjdXN0b21fbGF1bmNoX3VybCI6IiMvdmlldy9ib29rcy85NzgxMzE5MTUwODc3L2VwdWlvT0VCUFMveGh0bWwvbmVsXzk3ODE0NjQxODc5NTdfY29udC5odG1sIn0%3D>

34.

Murray, Robert K., Harper, Harold A. Harper's illustrated biochemistry [Internet]. 28th ed. New York, N.Y.: McGraw-Hill Medical; 2009. Available from:  
<https://ebookcentral.proquest.com/lib/leicester/detail.action?docID=4657718>

35.

Dartnell L. Knowledge : how to rebuild our world from scratch. London: Vintage; 2014.

36.

Lissauer JJ, De Pater I. Fundamental planetary science: physics, chemistry and habitability [Internet]. New York: Cambridge University Press; 2013. Available from:  
<http://site.ebrary.com/lib/leicester/docDetail.action?docID=10812136>

37.

Mattick JS. Opinion: RNA regulation: a new genetics? Nature Reviews Genetics. 2004 Apr;5(4):316-23.

38.

Lundin R, Lammer H, Ribas I. Planetary Magnetic Fields and Solar Forcing: Implications for Atmospheric Evolution. Space Science Reviews. 2007 Aug 17;129(1-3):245-78.

39.

Mattick JS. Opinion: RNA regulation: a new genetics? *Nature Reviews Genetics*. 2004 Apr;5(4):316-23.

40.

Brin GD. The Great Silence - the Controversy Concerning Extraterrestrial Intelligent Life,. 24:283-309. Available from: <http://adsabs.harvard.edu/full/1983QJRAS..24..283B>

41.

Hart MH. Explanation for the Absence of Extraterrestrials on Earth. 640:128-35. Available from:  
[http://articles.adsabs.harvard.edu/cgi-bin/nph-iarticle\\_query?1975QJRAS..16..128H&data\\_type=PDF\\_HIGH&whole\\_paper=YES&type=PRINTER&filetype=.pdf](http://articles.adsabs.harvard.edu/cgi-bin/nph-iarticle_query?1975QJRAS..16..128H&data_type=PDF_HIGH&whole_paper=YES&type=PRINTER&filetype=.pdf)

42.

Lada CJ. Stellar Multiplicity and the Initial Mass Function: Most Stars Are Single. *The Astrophysical Journal*. 2006 Mar 20;640(1):L63-6.

43.

Boss AP. Giant Planet Formation by Gravitational Instability. *Science*. 1997 Jun 20;276(5320):1836-9.

44.

Inaba S, Wetherill GW, Ikoma M. Formation of gas giant planets: core accretion models with fragmentation and planetary envelope. *Icarus*. 2003 Nov;166(1):46-62.

45.

Mao S, Paczynski B. Gravitational microlensing by double stars and planetary systems. *The Astrophysical Journal*. 1991 Jun;374.

46.

Mayor M, Queloz D. A Jupiter-mass companion to a solar-type star. *Nature*. 1995 Nov

23;378(6555):355-9.

47.

Swain MR, Deroo P, Griffith CA, Tinetti G, Thatte A, Vasisht G, et al. A ground-based near-infrared emission spectrum of the exoplanet HD 189733b. *Nature*. 2010 Feb 4;463(7281):637-9.

48.

Guo J, Zhang F, Zhang X, Han Z. Habitable zones and UV habitable zones around host stars. *Astrophysics and Space Science*. 2010 Jan;325(1):25-30.

49.

Wesson PS. Cosmology, extraterrestrial intelligence, and a resolution of the Fermi-Hart par. 31:161-70. Available from: <http://adsabs.harvard.edu/abs/1990QJRAS..31..161W>

50.

Deguchi S, Shimoshige H, Tsudome M, Mukai S a., Corkery RW, Ito S, et al. Microbial growth at hyperaccelerations up to 403,627 x g. *Proceedings of the National Academy of Sciences*. 2011 May 10;108(19):7997-8002.

51.

Sullivan, Woodruff Turner, Baross, John A. *Planets and life: the emerging science of astrobiology*. Cambridge: Cambridge University Press; 2007.

52.

Kauffman, Stuart A. *At home in the universe: the search for laws of complexity*. London: Penguin; 1996.

53.

Kauffman, Stuart A. *The origins of order: self-organization and selection in evolution*. New York: Oxford University Press; 1993.

54.

Lane, Nick. *Life ascending: the ten great inventions of evolution*. London: Profile; 2009.

55.

Lunine, Jonathan Irving. *Astrobiology: a multidisciplinary approach*. San Francisco, Calif: Pearson Addison Wesley; 2005.

56.

Mattick JS. Small regulatory RNAs in mammals. *Human Molecular Genetics*. 2005 Apr 15;14(suppl\_1):R121-32.

57.

Hüttenhofer A, Schattner P, Polacek N. Non-coding RNAs: hope or hype? *Trends in Genetics*. 2005 May;21(5):289-97.

58.

Walker JCG, Hays PB, Kasting JF. A negative feedback mechanism for the long-term stabilization of Earth's surface temperature. *Journal of Geophysical Research*. 1981;86(C10).

59.

Willenbring JK, von Blanckenburg F. Long-term stability of global erosion rates and weathering during late-Cenozoic cooling. *Nature*. 2010 May 13;465(7295):211-4.