

# NS2102: Astrobiology and Astrophysics

[View Online](#)

Alonso Ricardo. 'ORIGIN OF LIFE ON EARTH'. *Scientific American* 301.3 (2009): n. pag. Web.

<[Averill, Bruce and Eldredge, Patricia. \*Chemistry: Principles, Patterns, and Applications\*. International ed. San Francisco, Calif: Pearson Benjamin Cummings, 2007. Print.](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%25C+Incorporated&rft.issn=0036-8733&rft.eissn=1946-7087&rft.volume=301&rft.issue=3&rft.spage=54&rft.externalDocID=1851532311&paramdict=en-US>.</a></p></div><div data-bbox=)

Bada, Jeffrey L. 'New Insights into Prebiotic Chemistry from Stanley Miller's Spark Discharge Experiments'. 42 2186-2196. Web.

<<http://pubs.rsc.org/en/content/articlepdf/2013/cs/c3cs35433d>>.

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

Berg, Jeremy M., Tymoczko, John L., and Stryer, Lubert. *Biochemistry*. 7th ed. New York: W. H. Freeman, 2011. Web.

<<https://bibliu.com/users/saml/samlLeicester?RelayState=eyJjdXN0b21fbGF1bmNoX3VybCI6IiMvdmlldy9ib29rcy85NzgxMzE5MjQ4MDYyL2VwdWlvT0VCUFMveGh0bWwvYmVyXzk3ODExMTkxMTQ2NzFfY29udGVudHMuaHRtbCj9>>.

Boss, A. P. 'Giant Planet Formation by Gravitational Instability'. *Science* 276.5320 (1997): 1836-1839. Web.

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

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

Brown, Theodore L. *Chemistry: The Central Science*. 12th ed. Boston [Mass.]: Prentice Hall, 2012. Print.

Burrows, Andrew. *Chemistry3: Introducing Inorganic, Organic and Physical Chemistry*. Oxford: Oxford University Press, 2009. Web.

<<https://bibliu.com/app/#/view/books/9780192529893/epub/OEBPS/contents.html>>.

Canganella, Francesco, and Juergen Wiegel. 'Extremophiles: From Abyssal to Terrestrial Ecosystems and Possibly Beyond'. *Naturwissenschaften* 98.4 (2011): 253–279. Web.

Carl Sagan. 'A Search for Life on Earth from the Galileo Spacecraft'. *Nature* 365.6448 (1993): n. pag. Web.

<[Carroll, Bradley W. and Ostlie, Dale A. \*An Introduction to Modern Astrophysics\*. 2nd International ed. San Francisco: Pearson Addison-Wesley, 2007. Print.](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>.</a></p></div><div data-bbox=)

Charbonneau, David et al. 'Detection of Planetary Transits Across a Sun-like Star'. *The Astrophysical Journal* 529.1 (2000): L45–L48. Web.

Dartnell, Lewis. *Knowledge : How to Rebuild Our World from Scratch*. London: Vintage, 2014. Print.

Deguchi, S. et al. 'Microbial Growth at Hyperaccelerations up to 403,627 x g'. *Proceedings of the National Academy of Sciences* 108.19 (2011): 7997–8002. Web.

Di Giulio, Massimo. 'Biological Evidence against the Panspermia Theory'. *Journal of Theoretical Biology* 266.4 (2010): 569–572. Web.

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

Gilmour, Iain et al. *An Introduction to Astrobiology*. Cambridge: Cambridge University Press/Open University Press, 2004. Print.

Gislason, Sigurdur R. et al. 'Direct Evidence of the Feedback between Climate and Weathering'. *Earth and Planetary Science Letters* 277.1–2 (2009): 213–222. Web.

Grotzinger, John P. and Jordan, Thomas H. *Understanding Earth*. 6th ed. New York: W. H. Freeman, 2010. Print.

Guo, Jianpo et al. 'Habitable Zones and UV Habitable Zones around Host Stars'. *Astrophysics and Space Science* 325.1 (2010): 25–30. Web.

Hart, Michael H. 'Explanation for the Absence of Extraterrestrials on Earth.' 640 128–135. Web.

<[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)>.

Housecroft, Catherine E. and Constable, Edwin C. *Chemistry: An Introduction to Organic, Inorganic and Physical Chemistry*. 4th ed. Harlow: Prentice Hall, 2010. Print.

Hüttenhofer, Alexander, Peter Schattner, and Norbert Polacek. 'Non-Coding RNAs: Hope or Hype?' *Trends in Genetics* 21.5 (2005): 289–297. Web.

Inaba, S., G.W. Wetherill, and M. Ikoma. 'Formation of Gas Giant Planets: Core Accretion Models with Fragmentation and Planetary Envelope'. *Icarus* 166.1 (2003): 46–62. Web.

Kallenbach, Reinald, Willy Benz, and Günter Lugmair. 'Introduction: Timescales for the Formation of Terrestrial Planets'. In *From Dust to Terrestrial Planets*. Ed. W. Benz, R. Kallenbach, and G.W. Lugmair. Space sciences series of ISSI. Space Sciences Series of ISSI: Springer Science+Business Media, B.V., 2012. Print.

Kasting, J. 'Habitable Zones around Main Sequence Stars'. *Icarus* 101.1 (1993): 108–128. Web.

Kauffman, Stuart A. *At Home in the Universe: The Search for Laws of Complexity*. London: Penguin, 1996. Print.

---. *The Origins of Order: Self-Organization and Selection in Evolution*. New York: Oxford University Press, 1993. Print.

Lada, Charles J. 'Stellar Multiplicity and the Initial Mass Function: Most Stars Are Single'. *The Astrophysical Journal* 640.1 (2006): L63–L66. Web.

Lane, Nick. *Life Ascending: The Ten Great Inventions of Evolution*. London: Profile, 2009. Print.

Lineweaver, C. H. 'The Galactic Habitable Zone and the Age Distribution of Complex Life in the Milky Way'. *Science* 303.5654 (2004): 59–62. Web.

Lissauer, Jack. '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. Vol. 19. Space Sciences Series of ISSI: Springer, 2005. Web.

<<https://ebookcentral.proquest.com/lib/leicester/detail.action?docID=303249>>.

Lissauer, Jack Jonathan, and Imke De Pater. *Fundamental Planetary Science: Physics, Chemistry and Habitability*. New York: Cambridge University Press, 2013. Web.

<<http://site.ebrary.com/lib/leicester/docDetail.action?docID=10812136>>.

Lundin, Rickard, Helmut Lammer, and Ignasi Ribas. 'Planetary Magnetic Fields and Solar Forcing: Implications for Atmospheric Evolution'. *Space Science Reviews* 129.1–3 (2007): 245–278. Web.

Lunine, Jonathan Irving. *Astrobiology: A Multidisciplinary Approach*. San Francisco, Calif: Pearson Addison Wesley, 2005. Print.

Mao, Shunde, and Bohdan Paczynski. 'Gravitational Microlensing by Double Stars and Planetary Systems'. *The Astrophysical Journal* 374 (1991): n. pag. Web.

Mattick, J. S. 'Small Regulatory RNAs in Mammals'. *Human Molecular Genetics* 14.suppl\_1 (2005): R121–R132. Web.

Mattick, John S. 'Opinion: RNA Regulation: A New Genetics?' *Nature Reviews Genetics* 5.4 (2004): 316–323. Web.

---. 'Opinion: RNA Regulation: A New Genetics?' *Nature Reviews Genetics* 5.4 (2004): 316–323. Web.

Mayor, Michel, and Didier Queloz. 'A Jupiter-Mass Companion to a Solar-Type Star'. *Nature* 378.6555 (1995): 355–359. Web.

'Microbial Growth at Hyperaccelerations up to  $403,627 \times g$ '. 108.19 (10AD): n. pag. Web.  
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3093466/?tool=pmcentrez&rendertype=abstract>.

Murray, Robert K. and Harper, Harold A. *Harper's Illustrated Biochemistry*. 28th ed. New York, N.Y.: McGraw-Hill Medical, 2009. Web.  
<https://ebookcentral.proquest.com/lib/leicester/detail.action?docID=4657718>.

Nelson, David L., Cox, Michael M., and Lehninger, Albert L. *Lehninger Principles of Biochemistry*. 6th ed. New York, N.Y.: W.H. Freeman, 2013. Web.  
<https://bibliu.com/users/saml/samlLeicester?RelayState=eyJjdXN0b21fbGF1bmNoX3VybCI6IiMvdmlldy9ib29rcy85NzgxMzE5MTUwODc3L2VwdWIvT0VCUFMveGh0bWvbmVsXzk3O DE0NjQxODc5NTdfY29udC5odG1sIn0%3D>.

'Panspermia (Wikipedia)'. N.p., n.d. Web. <https://en.wikipedia.org/wiki/Panspermia>.

Plaxco, Kevin W. and Gross, Michael. *Astrobiology: A Brief Introduction*. 2nd ed. Baltimore, Mass: Johns Hopkins University Press, 2011. Print.

Raven, Peter H. et al. *Biology*. 10th ed. New York, NY: McGraw-Hill, 2014. Print.

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

Sullivan, Woodruff Turner and Baross, John A. *Planets and Life: The Emerging Science of Astrobiology*. Cambridge: Cambridge University Press, 2007. Print.

Swain, Mark R. et al. 'A Ground-Based near-Infrared Emission Spectrum of the Exoplanet HD 189733b'. *Nature* 463.7281 (2010): 637–639. Web.

'The Evolution of Organelles'. Web.  
<http://www.sumanasinc.com/webcontent/animations/content/organelles.html>.

Thommes, E. W., S. Matsumura, and F. A. Rasio. 'Gas Disks to Gas Giants: Simulating the Birth of Planetary Systems'. *Science* 321.5890 (2008): 814–817. Web.

Tipler, Paul A. and Mosca, Gene P. *Physics for Scientists and Engineers: With Modern Physics*. 6th ed. New York, NY: W.H. Freeman, 2008. Web.  
<https://bibliu.com/app/#/view/books/9781319155988/pdf2html/ex/index.html>.

Walker, James C. G., P. B. Hays, and J. F. Kasting. 'A Negative Feedback Mechanism for the

'Long-Term Stabilization of Earth's Surface Temperature'. Journal of Geophysical Research 86.C10 (1981): n. pag. Web.

Wesson, Paul S. 'Cosmology, Extraterrestrial Intelligence, and a Resolution of the Fermi-Hart Par'. 31 161-170. Web.  
<<http://adsabs.harvard.edu/abs/1990QJRAS..31..161W>>.

Wickramasinghe, N. Chandra, and J. T. Trevors. 'Non-Terrestrial Origin of Life: A Transformative Research Paradigm Shift'. Theory in Biosciences 132.2 (2013): 133-137. Web.

Willenbring, Jane K., and Friedhelm von Blanckenburg. 'Long-Term Stability of Global Erosion Rates and Weathering during Late-Cenozoic Cooling'. Nature 465.7295 (2010): 211-214. Web.

Zumdahl, Steven S. Chemical Principles. 6th ed. Belmont, Calif: Brooks/Cole, 2009. Web.  
<[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)>.