



Ten Science Fiction Writers for Scientists and Science Enthusiasts

Andrew Fraknoi (*Foothill College*)

For many people, especially those with a strong interest in the sciences, the mention of science fiction sometimes brings up memories of awful popular movies and TV shows they have seen — with scripts that defy logic or subvert the rules of the nature. Members of the public sometimes get science fiction confused with fantasy (as many literary critics tend to do) and lump serious science fiction in with stories of unicorns and magic adventures. Yet, when you choose carefully, science fiction can be a remarkable tool for illuminating some of the most interesting ideas and discoveries in science for a much wider audience.

I keep a web site of scientifically reasonable science fiction stories on the Astronomical Society of the Pacific web site at: <http://www.astrosociety.org/education/resources/scifi.html> and also use science fiction in my teaching of introductory astronomy. As a result, from time to time, I am asked by students or colleagues for a list of favorite authors or stories for someone new to science fiction (but not

to science) to read. Being asked for your favorite story is not unlike being asked for your favorite song or favorite film — it's really hard to choose just one.

So, in this column, I thought I would highlight ten authors whose novels and stories use reasonable science and whose work I particularly enjoy. As with any top ten list, I should say that these choices are personal and idiosyncratic, and that there are many other authors who also do wonderful work in what is called “hard” science fiction — meaning not that



Gregory Benford, Andrew Fraknoi, and Fred Pohl at JPL in 1989 (Photo courtesy of Andrew Fraknoi)

the stories are necessarily hard to read, but that they are restricted by the hard realities of actual science. Still, these ten are writers whose work I have particularly enjoyed for both their adherence to real science and for their style of writing. They are not in any particular order.

1. Gregory Benford

Benford is a professor of physics at the University of California at Irvine and a remarkably gifted writer, who combines mind-boggling ideas from science with vivid, memorable characters and philosophical speculation. He is perhaps the most skilled of all modern writers at turning scientific concepts into ideas for stories.

Where to begin: His acclaimed series of novels that ultimately takes us to the bizarre region at the center of the Milky Way Galaxy begins with *In the Ocean of Night*. Many of his short stories, such as “Exposures,” feature scientists at work.

2. Alastair Reynolds

Reynolds has a PhD in astrophysics, worked at ESA, but is now a full-time writer. He usually combines scintillating science ideas with a kind of baroque mystery writing that is like “film noir” on paper.

Where to begin: His “Beyond the Aquila Rift” is one of the best science fiction short stories I have ever read and his first novel *Revelation: Space* is a good place to start unraveling the many mysteries of his continuing series of novels and stories set in the same future universe.

3. Larry Niven

Niven is the grand old man of “hard science” science fiction. His “Tales of Known Space” series has some of the most interesting examples of alien life

forms and planetary engineering ever put on paper. His writing is direct, to the point, and enormous fun.

Where to begin:

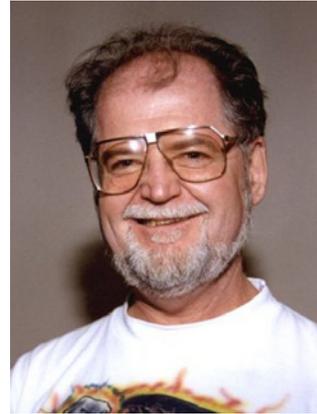
The novel *Protector* rethinks the origin of humanity and sets the scene for “Tales of Known Space.” His *World Out of Time* uses black holes and ideas from the general theory of relativity to propose a way to travel into the distant future.

4. Fred Hoyle

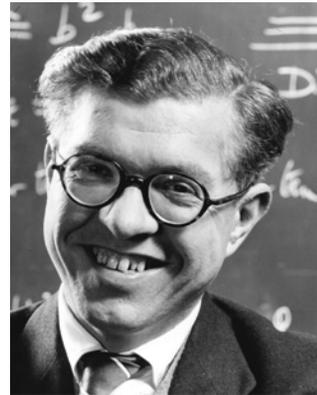
Hoyle was one of the most imaginative astrophysicists of the 20th century, sometimes right, often wrong, but always outspoken and eloquent. He overflowed with ideas, some of which he put into his science fiction novels and stories.

Where to begin: His *October the First Is*

Too Late is one of my favorites — the first attempt to put the many-worlds interpretation of quantum mechanics into fictional form.



Larry Niven
(Photo courtesy of Larry Niven)



Fred Hoyle
(Cambridge University Photograph)

5. Robert Sawyer

Sawyer is an amateur astronomer and has a passion for anthropology, interests which he frequently combines to write about SETI, exploring new ideas and approaches to the age-old question of “Are we alone in the universe?”

Where to begin: His novel *Illegal Alien* is an appealing send-up of murder mysteries, with a solution that requires an understanding of astronomy to appreciate fully.

6. Stephen Baxter

Baxter is a British author with degrees in math and engineering, whose stories scintillate with ideas from science. His “Xeelee” sequence of novels and stories imagines the past and future of the universe on a scale arguably larger than any other author has dared to contemplate.

Where to begin: His story collection *Vacuum Diagrams* is annotated and has a timeline that can help readers get into the sequence.

7. Ted Chiang

Chiang is a technical writer in the computer field and has so far written only short stories — but each of those is small gem. He combines clever ideas with beautifully crafted prose. His inspiration comes from many fields, including linguistics and computer science.

Where to begin: His remarkable, award-winning



Robert Sawyer
(Photo by Christina Molendyk)

short story, “The Story of Your Life,” combines ideas of time and linguistics in a way that is truly marvelous.

8. Isaac Asimov

Asimov, one of the most prolific authors in history, with over 500 books to his credit, had a PhD in biochemistry and often extrapolated stories from known facts in science. He was not a fancy writer, but he wrote many stories with astronomical ideas in them and kept up with new developments in the field throughout his life.

Where to begin: His classic novel *The End of Eternity* was one of the two books that had a strong influence on my own decision to become an astronomer.

9. Alfred Bester

Bester was not trained in science, although he was widely read in many fields. He wrote in many other areas besides straight science fiction. His imaginative short stories have been an influence on many other authors.

Where to begin: His novel *The Stars My Destination*, a science-fiction re-imagining of *The Count of Monte Cristo*, has been cited by many scientists (including Carl Sagan) as an early inspiration; it was the other book that influenced me as a teenager to take up astronomy.

10. Fred Pohl

Pohl also is self-taught in astronomy, and has had a long career as author, editor, literary agent, and collaborator in science fiction. His witty and sometimes acerbic takes on where modern trends in our society could take us are quite thought-provoking.

Where to begin: I particularly like the novel



Painting of Isaac Asimov by Rowena Morrill

Gateway, which is lots of fun, uses black holes in a scientifically reasonable way, and introduces the notion of “black hole guilt” into literature.



In addition to the above top ten, science-fiction novices who are astronomy fans may want to take a look at the work of some of our astronomer colleagues who are writing science fiction. These include astronomer/artist William Hartmann, NASA space scientist Geoffrey Landis, astronomer Michael Brotherton, former American Astronomical Society president J. Craig Wheeler, and Eric Kotani (the pen-name of NASA’s Yoji Kondo.) Brotherton and

Hartmann have written *Astronomy Beat* columns — Brotherton’s is specifically on writing science fiction. For other writers and stories organized by topic in astronomy, see the web resource guide cited above. However you select your first excursion into science fiction, I wish you good reading and enjoyable flights of the imagination.

About the Author:

Andrew Fraknoi has been editing these *Astronomy Beat* columns since the inception of the series. He is currently Senior Educator at the ASP and Chair of the Astronomy Department at Foothill College (near San Francisco). He was founding co-editor of the on-line journal *Astronomy Education Review* and the lead author on the *Voyages* series of introductory astronomy textbooks. In the 1980’s, with Byron Preiss, he co-edited two collections of science and science fiction (called *The Planets* and *The Universe*) for Bantam Books. He chronicles new developments in astronomy and astronomy education on his “AstroProf” Facebook page at: www.facebook.com/Fraknoi



Resources for Further Exploration

The Internet Speculative Fiction Database: <http://www.isfdb.org/cgi-bin/index.cgi> (A remarkable site which indexes most stories and novels in science fiction. You can see what any author has written or find all the places a story you are

interested in has been published.)

Free Speculative Fiction On-Line:

<http://www.freesfonline.de/index.html>

(A nice list of short stories that are available on line without charge.)

ASP Board member Chris Impey interviews

Gregory Benford at:

<http://www.gregorybenford.com/uncategorized/interview-by-chris-ipey-university-of-arizona/>

Fraknoi, Andrew “Teaching Astronomy with Science Fiction” (in *Astronomy Education Review*:

<http://dx.doi.org/10.3847/AER2002009> ♦



Give a Stellar Gift

Help foster scientific curiosity, science literacy and the joy of exploration & discovery through astronomy ... for tomorrow's science, technology and academic leaders! Share the gift of membership in the ASP!

www.astrosociety.org/membership.html

Astronomy Beat is a service exclusively for members of the Astronomical Society of the Pacific. For more information about becoming a member, visit

www.astrosociety.org/membership.html.

One copy of this article may be downloaded on any single computer and/or printed for your personal, non-commercial use. No part of any article may be reproduced in any form, sold, or used in commercial products without written permission from the ASP.

The Astronomical Society of the Pacific increases the understanding and appreciation of astronomy by engaging scientists, educators, enthusiasts and the public to advance science and science literacy.