



## One Impossible Thing at a Time

By  
Michael McCollum

In June of 1997, I began advertising a new feature at Sci Fi - Arizona, namely the Limited Edition novels in the Gift Shop. The idea behind limited edition novels is relatively straightforward. If you give me sufficient money to cover my costs, my labor, and the wear and tear on my equipment, I will be pleased to write you (and any member of the opposite sex you choose) into one of my novels. In other words, I substitute the names you provide for those of the hero and heroine, print and bind a hard copy, and send you the finished book.

Frankly, I thought the idea would be fairly non-controversial. I have my own INTERNET bookstore and publishing company, so why not market my intellectual property on a personal level, as well as on a mass level? Besides they make great gifts for spouses or loved ones. (*Men, take note: Giving a young lady a novel in which the two of you star is cheaper than taking her to a five star restaurant, and probably much more effective! — end of commercial.*)

Considering some of the comments that have appeared in various discussion groups where I posted my notices, you would think that I had murdered my parents and was preparing to eat them. There were those who felt that the sanctity of a book is such that to change the names of the main characters is tantamount to high treason. There were others who seemed to think that for a novel to be good, the characterization must hinge on the character names, and any change must necessarily pull out the lynch pin around which the entire story revolves.

For the record, after printing several such books, I find that they read pretty much the same regardless of what you name the hero and heroine. If you liked the original, you will like the modified version. If you didn't, you won't.

So having come under attack – unfairly, in my opinion – I found myself asking why people have to greet any new idea so negatively. After all, isn't a poor cyber-author free to offer his wares in whatever form he chooses without having people cast aspersions on his ethics, morals, and writing ability? One woman actually accused me of being heterocentric, or maybe even a homophobe, because I require the two characters to be of different sexes. (If you wonder why, consider all of the *he* and *she* pronouns that would have to be unscrambled in a 100,000-word novel if I were to change the sex of one of the characters. The very thought makes my head hurt.)

Yet, while suffering the slings and arrows of critics who have little idea what I am doing, it suddenly occurred to me that my own hands are far from clean on the subject of criticism. As you will have noted in earlier chapters, I am not shy about attacking

Hollywood and various movie producers over what I consider their shortcomings in the field of science fiction. Who am I to carp? The most I've ever had to do with a movie studio was a daylong, private tour of the *Star Trek: The Next Generation* set that my wife and I took several years ago. Shouldn't the people who make movies have as much right to be free of amateur criticism as writers working in the new medium of cyberspace? Yes, they should. Which is to say, no they shouldn't!

Huh?

If that last thought seemed a bit opaque, the point I am making is that movie producers have exactly the same right to be free of criticism as writers, which is no right at all. When you become a professional writer, you are in the business of creating something from out of nothing, after which you offer your creation to the public in exchange for money. With your first paycheck you place your beloved work in the public shooting gallery, a target for anyone who has expended hard earned cash to read what you have written. And since you can seldom determine who has paid you and who hasn't, the right of criticism belongs to every member of the public, even those who have never given you a dime! That is the price you pay for going public with your most private thoughts.

(One thing the controversy has taught me is that there are a few universal verities, and that the most important to writers is this: *Inside every living, breathing human being there dwells a literary critic who is screaming to get out!*)

So if I'm so sensitive to criticism myself, why do I attack the poor Hollywood writers and producers? They're doing the best they can, aren't they?

There are two basic reasons why I use movie examples in this book. The first is to give us a common reference point from which to learn about the art of writing. I can illustrate my points with books (and often do), but holding up various movies as cautionary examples is more effective. The reason for this is simple. More of us have shared the experience of watching the same movie than have read the same book. After all, to be successful, a novel must appeal to a few hundred thousand people. A movie, on the other hand, must appeal to millions!

The second reason that I attack Hollywood on the subject of science fiction is that they are, for the most part, absolutely terrible at it! The need to appeal to a large audience causes them to come down with "lowest common denominator disease." Take out everything that is even a little technical and you will find that you have a flat piece of science fiction. Keep the technical stuff in, however, and you are liable to have expository passages longer than Hamlet's soliloquy. Then there are the length constraints of the medium. A novel is typically somewhere between 250 and 500 pages in length. A script for a two hour movie is approximately 120 pages. Worse, the script format has many fewer words per page than a novel. These problems make it nearly impossible to delve into the complexities that are normal for even the simplest novel.

But the constraints of the medium don't explain all the bad science fiction movies that are made. There is a more basic problem, one that no amount of tinkering with the format can solve. The truth is that the people in Hollywood, like much of the general public, don't really understand what science fiction is ... and isn't. They think it's about special effects and psychedelic light shows on the screen. Nothing can be farther from the truth.

But if science fiction isn't about cute robots and exploding planets, what is it about? Like the wise man said upon surveying the carnage following a particularly violent barroom brawl, "Opinions vary on that subject." Within the science fiction community the argument over what is and isn't science fiction has been going on almost as long as the Irish have been arguing over who really won the Battle of the Boyne.

There are many categories of science fiction. The field runs the gamut from space opera, to cautionary tales, to social commentary, to fantasy, to hi-tech (the kind of nuts-and-bolts engineer fiction that I write). Yet, that which makes a story science fiction depends not at all on these artificial categories. At its heart, a science fiction story is basically an intellectual puzzle constructed by the writer for the amusement of the readers. And like a crossword puzzle, the reader gains enjoyment from solving the puzzle – either through his own efforts or via the artful presentation of the solution by the writer.

Think about it. The author presents you, the reader, with a series of facts. As you read along, your brain processes this information and becomes engrossed in the problem. Eventually, you reach the end of the story and the author presents his or her solution. If the conclusion was something of a surprise to you, then you are entertained. If not, you attack the story as being "hackneyed" or "predictable."

An extreme case of this phenomenon is the "surprise ending" story, and these are not limited to the realm of science fiction. Do you remember your reaction the first time you saw *The Sting*, with Robert Redford and Paul Newman? Throughout this story of Depression Era con men, we think the plot is proceeding in fairly predictable fashion, until, at the end, we discover that the Big Con has been committed against the moviegoers and not the villain played by Robert Shaw. What makes *The Sting* work as a movie is the electric thrill that goes down our spines when we discover that we've been snookered ("tricked" for my non-American readers). The director has shown us the solution to an intellectual puzzle that we didn't foresee, and we are enchanted.

This isn't to say that all science fiction stories need to be surprise-ending stories of the sort that O. Henry was so fond of. That would be boring. Nor is it to suggest that science fiction *has* to have an intellectual puzzle at its heart. However, the best science fiction is an examination of some aspect of the universe that is unfamiliar to the readers, and is, therefore, a "puzzle" story.

What is necessary is for the reader to be cognizant of having been caught slightly unaware as he or she finishes the story. It is that quiet "Aha!" that echoes through our minds that tell us we've read a good book. We get the most satisfaction when we think, "Of course!" as we finish that last page of a story. That which seemed so opaque at the beginning has been transformed into something that, in retrospect, was inevitable. It is the unexpected solution to the intellectual puzzle that makes a science fiction story work and generates that "sense of wonder" so many of us cite as the reason we began reading the stuff in the first place.

So, science fiction turns out not to be a literature of mad scientists, bug-eyed monsters, and rocket ships after all. True, it has all of these, and more. But it is first and foremost a literature of ideas. In fact, in many science fiction stories, the idea is so overpowering that it pushes everything else – like plot, characterization, and believability – out of the story. We've all read these stories. The cardboard hero invents his *geewhiz* spaceship, takes his cardboard girlfriend on a flight to some marvelous planet, and then

spends fifty pages lecturing her about how wonderful the spaceship will make life in the future. Not all of these “naked idea” stories are about rocket ships, of course. Some are naked social commentary or utopian diatribes. For reference I give you *Looking Backward, 2000-1887*, by Edward Bellamy.

Don't think that all idea stories are bad, however. In fact, it is difficult to write a good piece of science fiction that isn't an idea story at its heart. Many of these are “What if?” exercises, exploring the consequences that would result if something impossible (or not yet possible) suddenly were to become reality. It is this ability to explore potential futures that makes science fiction such a popular and enduring art form. And no, I'm not talking about predicting the future. Science fiction's record of predicting what actually came to pass is fairly poor. Did any SF writer predict the personal computer, for instance? I'm talking about the ability to explore potentialities, not actualities. It is this at which science fiction truly excels.

I am one of the speakers on the American Institute of Chemical Engineers (AIChE) Speakers Tour, despite the fact that I am not a chemical engineer. This is a program in which the Institute arranges tours of its various sections twice each year. Whenever I lecture on science fiction, I always start off by asking my audience if they can name the first science fiction novel ever written. Generally, my question is met with blank stares. After a few seconds, I then add, “It was written by a woman, and you've all heard of it!” Usually that is sufficient clue for someone to guess *Frankenstein*, by Mary Wollstonecraft Shelley, 1818.

Was *Frankenstein* science fiction? It was indeed, and remains to this day one of the purest science fiction novels ever written. “But wait a second,” you reply. “You said that science fiction isn't about monsters!”

What I said was that science fiction *has* monsters, but it isn't *about* monsters. Neither is *Frankenstein*. Mary Shelley started the novel on a dare. Her husband, Percy Bysshe Shelley, the noted poet and social malcontent, was also supposed to write a book. He never finished his. But Mary, being more reliable, not only finished what she set out to do; she invented an entirely new genre doing it.

In *Frankenstein*, Mary Shelley postulates that something that was impossible in her day (and remains so in ours) is actually possible — namely bringing people back from the dead. Her mechanism for doing this is medical science. Having postulated this “impossible” premise, she goes on to explore its ramifications. As we all know, her conclusion is that there might be some unpleasant side effects associated with the procedure.

*Frankenstein* is a novel about a man who is able to bring people back from the dead. It is not a novel about a man who, in addition to his skill at reanimating corpses, invents the airplane, summons devils from out of Hell to do his bidding, and spins straw into gold in his spare time. You have all read stories or seen movies about each of these things, but never together. The reason for this, of course, is that such a book would be a hopeless mishmash, an abomination, and would be virtually impossible to read without putting one's fist through the nearest wall somewhere around Chapter 12. In other words, it would be a great deal like a movie I hated, *Buckaroo Banzai!*

Which brings us to an extremely important point to the science fiction writer, first postulated by the grandfather of modern science fiction, Herbert George Wells. If you are going to write stories in which impossible things happen, the quota is *ONE*

*IMPOSSIBLE THING PER STORY!* If you violate this rule, then you, too, will be responsible for fist-size holes in the wall all over the world.

So, perhaps it is more accurate to say that science fiction is not a literature of ideas, but rather one of *idea* – singular. That is, each science fiction story explores the consequences of a solitary idea, wringing from it all of the juice it contains. If you have two impossible ideas, then you explore their consequences in two stories. Three ideas, three stories ... and so on.

“But isn’t that rather limiting?” you ask. “After all, science fiction has so many new ideas that you need to put a dozen in each story just to keep up!”

Really? Can you tell me the last time you saw a truly new idea in a science fiction story? If you think about it carefully, I think you will find that you have trouble answering that question. So, just what was the last totally original idea to spring from science fiction’s garden? Might I suggest to you that it was Bob Shaw’s invention of *slow glass* in the August 1966, issue of *Analog Science Fiction*?

“What the *hell* is slow glass?” you ask excitedly, “and what about Black Holes, wormholes, and neutron stars?”

We’ll get to slow glass in a moment. As for those other things, astronomers postulated all of them before they appeared in science fiction. So we aren’t really inventing them, just exploring the consequences of their potential existence. So, too, the other inventions of science fiction: rocket ships, robots, killer plagues, and mad scientists. Each of these ideas goes back more than a century. As we have seen, mad scientists go clear back to 1818! Try as I might, I can’t think of a truly original idea in SF later than 30 years ago. (I know I’ll get hundreds of e-mails with candidate ideas that I’ve overlooked. Just remember, if you want to nominate something, *you* write the book next time.)

Back to *slow glass*!

In 1966, Bob Shaw introduced slow glass in a story titled, “In Light of Other Days.” It was one of at least two stories he wrote on the subject, and both are exemplary examples of the One-Impossible-Thing-At-A-Time Rule. Basically slow glass looks like ordinary glass, but a ray of light that goes in one side doesn’t exit the opposite side until minutes, hours, days, months, or years later. That, then, is the impossible thing – a pane of glass within which the speed of light is slowed to only millimeters per year.

As the story begins, the narrator and his wife are having marital problems and they have gone for a driving vacation in the English highlands. There they tour a district filled with slow glass farms. A slow glass farm is a place on the side of a hill where panes of slow glass have been set vertical so that they can spend years or even decades drinking in the beautiful view. When a piece of ten year slow glass has ten full years of seasons stored in it, the pane is sold to a city dweller who takes it home and installs it in his apartment. For the next decade it appears to him that his apartment is located on the side of that same hill. Nor is the beautiful view a still life. Every minute of the previous ten years is visible from inside the view window, with the long ago scene revealing itself at the normal rate of one year per year.

After introducing his impossible idea, Shaw goes to some length to describe the technology of slow glass. The reason for this is that he needs to convince his readers that slow glass really exists. He describes the tall scaffolding that litters the side of a hill facing the beautiful view, with the endless panes of glass being “charged up” with

scenery. He talks about the precision needed to manufacture “synchronous glass,” just thick enough so that the delayed sun will rise and set in synchronization with the real sun and the view window seasons will be synchronized with the actual seasons. In the later of the two stories, he lists all of the new inventions that are built around slow glass technology, inventions such as street lighting. After all, if it takes twelve hours for a ray of light to pass through a given thickness of slow glass, the noon sun will emanate from the pane at midnight, turning night into day.

Then, having convinced us that the impossible thing exists, he ignores the obvious ramifications of his invention and launches into an exploration of some of the more esoteric side effects. In “Light of Other Days,” the narrator stops at a slow glass shop and finds the owner in the front yard of his cottage. Inside the cottage, occasionally visible through the front window, are the man’s wife and child.

The shop owner invites the narrator and his wife to perch on the stone wall in front of the cottage, and goes inside to retrieve a rug for them to sit on. There ensues a sales discussion regarding the purchase of a pane of slow glass. Eventually a bargain is struck and the shop owner goes off to retrieve the pane from its scaffolding. In the meantime, it has started to rain and the narrator, not wanting the rug to get wet, takes it back to the cottage.

When he opens the door, he finds the cottage deserted and cluttered beyond belief. There is no sign that anyone but the shop owner has lived there for a long time. When the owner returns, he sees that the narrator has been inside and seems confused. It is then that the slow glass farmer explains that the front window of his cottage is a pane of slow glass. In truth, his wife and son are dead, killed three years earlier in an automobile accident. He spends every moment he can in the front yard of the cottage in order to watch his dead family as the light of happier times slowly seeps slowly out of the glass.

So, having postulated an original invention, Shaw ignores the obvious answers to the question, “How would this change the world?” and instead figures out how this “impossible thing” would affect one lonely old man and a passing couple with marital problems. In personalizing what had previously been an impersonal invention, Shaw turns “In Light of Other Days” from an invention story into a powerful emotional experience. He surprises us on a level we didn’t expect, and in so doing, wins our hearts.

The second slow glass story is not as effective as the first, partially because we have been forewarned as to what to expect. In that story Shaw fills out the “slow glass universe,” including describing the street lighting previously discussed. The situation he sets up is once again very human and totally unpredictable. The protagonist this time is a retired judge who decades earlier had ordered a murderer executed. The problem preying on his mind is that the conviction was based on circumstantial evidence. The murder had, however, taken place in front of a piece of 30-year thick slow glass. And having wondered for three decades whether he had executed the wrong man, the judge now has the opportunity to learn the truth. The night of the murder is about to appear in the pane of glass.

So, if you find your self writing a science fiction story in which you are postulating things that are currently not possible, ask yourself a simple question: Just how many impossible things do I have in my story? If the answer is more than one, take the extras out and save them for future stories.

Then, having decided on your one impossibility, make a list of all the obvious consequences should your idea ever become possible. What exactly would happen if we could really bring the dead back to life? What inventions would be possible if we invented slow glass? Once you have your list, put it aside. You can use these things for background, but they are not what the story is about. You have bigger fish to fry.

With the primary effects out of the way, ask yourself what the secondary effects might be. List them. Once you have the less obvious consequences charted, you may have a subject for your story. Or else, you may want to put aside the list of secondary effects and go for the tertiary effects instead.

Remember the owner of the slow glass shop whose heart is breaking because he can see his dead family through the front window of his cottage, or the retired jurist whose conscience is troubled because he may have sent the wrong man to the gas chamber. Those are the tertiary effects of Shaw's one impossible thing. The street lighting and all the rest are just filler material, to be passed over lightly, a mere detail to convince the reader that the impossible thing is, indeed, possible.

And if you are patient enough and skilled enough, you will surprise your reader when he or she finally discovers where you are going with your story. Upon being surprised, they will laud you for a difficult job that you have done well. It's harder to go for the non-obvious, of course, but far more satisfying – both to writer and reader. So why take the path most traveled when there is all that neat stuff hiding out in the bushes?

Or to put it another way, "Seek, my children, and you shall find, but seek only one impossible thing at a time!"

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The End

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Michael McCollum, Proprietor  
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#### **1. Life Probe - <sup>US</sup>\$4.50**

The Makers searched for the secret to faster-than-light travel for 100,000 years. Their chosen instruments were the Life Probes, which they launched in every direction to seek out advanced civilizations among the stars. One such machine searching for intelligent life encounters 21st century Earth. It isn't sure that it has found any...

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Three hundred years after humanity made its deal with the Life Probe to search out the secret of faster-than-light travel, the descendants of the original expedition return to Earth in a starship. They find a world that has forgotten the ancient contract. No matter. The colonists have overcome far greater obstacles in their single-minded drive to redeem a promise made before any of them were born...

### **3. Antares Dawn - US\$4.50**

When the super giant star Antares exploded in 2512, the human colony on Alta found their pathway to the stars gone, isolating them from the rest of human space for more than a century. Then one day, a powerful warship materialized in the system without warning. Alarmed by the sudden appearance of such a behemoth, the commanders of the Altan Space Navy dispatched one of their most powerful ships to investigate. What ASNS Discovery finds when they finally catch the intruder is a battered hulk manned by a dead crew.

That is disturbing news for the Altans. For the dead battleship could easily have defeated the whole of the Altan navy. If it could find Alta, then so could whomever it was that beat it. Something must be done...

### **4. Antares Passage - US\$4.50**

After more than a century of isolation, the paths between stars are again open and the people of Alta in contact with their sister colony on Sandar. The opening of the foldlines has not been the unmixed blessing the Altans had supposed, however.

For the reestablishment of interstellar travel has brought with it news of the Ryall, an alien race whose goal is the extermination of humanity. If they are to avoid defeat at the hands of the aliens, Alta must seek out the military might of Earth. However, to reach Earth requires them to dive into the heart of a supernova.

### **5. Antares Victory – First Time in Print – US\$7.00**

After a century of warfare, humanity finally discovered the Achilles heel of the Ryall, their xenophobic reptilian foe. Spica – Alpha Virginis – is the key star system in enemy space. It is the hub through which all Ryall starships must pass, and if humanity can only capture and hold it, they will strangle the Ryall war machine and end their threat to humankind forever.

It all seemed so simple in the computer simulations: Advance by stealth, attack without warning, strike swiftly with overwhelming power. Unfortunately, conquering the Ryall proves the easy part. With the key to victory in hand, Richard and Bethany Drake discover that they must also conquer human nature if they are to bring down the alien foe ...

### **6. Thunderstrike! - US\$6.00**

The new comet found near Jupiter was an incredible treasure trove of water ice and rock. Immediately, the water-starved Luna Republic and the Sierra Corporation, a leader in asteroid mining, were squabbling over rights to the new resource. However, all thoughts of profit and fame were abandoned when a scientific expedition discovered that the comet's trajectory placed it on a collision course with Earth!

As scientists struggled to find a way to alter the comet's course, world leaders tried desperately to restrain mass panic, and two lovers quarreled over the direction the comet was to take, all Earth waited to see if humanity had any future at all...

## **7. The Clouds of Saturn - US\$4.50**

When the sun flared out of control and boiled Earth's oceans, humanity took refuge in a place that few would have predicted. In the greatest migration in history, the entire human race took up residence among the towering clouds and deep clear-air canyons of Saturn's upper atmosphere. Having survived the traitor star, they returned to the all-too-human tradition of internecine strife. The new city-states of Saturn began to resemble those of ancient Greece, with one group of cities taking on the role of militaristic Sparta...

## **8. The Sails of Tau Ceti – US\$4.50**

*Starhopper* was humanity's first interstellar probe. It was designed to search for intelligent life beyond the solar system. Before it could be launched, however, intelligent life found Earth. The discovery of an alien light sail inbound at the edge of the solar system generated considerable excitement in scientific circles. With the interstellar probe nearing completion, it gave scientists the opportunity to launch an expedition to meet the aliens while they were still in space. The second surprise came when *Starhopper's* crew boarded the alien craft. They found beings that, despite their alien physiques, were surprisingly compatible with humans. That two species so similar could have evolved a mere twelve light years from one another seemed too coincidental to be true.

One human being soon discovered that coincidence had nothing to do with it...

## **9. Gibraltar Earth – First Time in Print — \$6.00**

It is the 24th Century and humanity is just gaining a toehold out among the stars. Stellar Survey Starship *Magellan* is exploring the New Eden system when they encounter two alien spacecraft. When the encounter is over, the score is one human scout ship and one alien aggressor destroyed. In exploring the wreck of the second alien ship, spacers discover a survivor with a fantastic story.

The alien comes from a million-star Galactic Empire ruled over by a mysterious race known as the Broa. These overlords are the masters of this region of the galaxy and they allow no competitors. This news presents Earth's rulers with a problem. As yet, the Broa are ignorant of humanity's existence. Does the human race retreat to its one small world, quaking in fear that the Broa will eventually discover Earth? Or do they take a more aggressive approach?

Whatever they do, they must do it quickly! Time is running out for the human race...

## **10. Gibraltar Sun – First Time in Print — \$7.00**

The expedition to the Crab Nebula has returned to Earth and the news is not good. Out among the stars, a million systems have fallen under Broan domination, the fate awaiting Earth should the Broa ever learn of its existence. The problem would seem to allow but three responses: submit meekly to slavery, fight and risk extermination, or hide and pray the Broa remain ignorant of humankind for at least a few more generations. Are the hairless apes of Sol III finally faced with a problem for which there is no acceptable solution?

While politicians argue, Mark Rykand and Lisa Arden risk everything to spy on the all-powerful enemy that is beginning to wonder at the appearance of mysterious bipeds in their midst...

### **11. Gridlock and Other Stories - US\$4.50**

Where would you visit if you invented a time machine, but could not steer it? What if you went out for a six-pack of beer and never came back? If you think nuclear power is dangerous, you should try black holes as an energy source — or even scarier, solar energy! Visit the many worlds of Michael McCollum. I guarantee that you will be surprised!

## Non-Fiction Books

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### **12. The Art of Writing, Volume I - US\$10.00**

Have you missed any of the articles in the Art of Writing Series? No problem. The first sixteen articles (October, 1996-December, 1997) have been collected into a book-length work of more than 72,000 words. Now you can learn about character, conflict, plot, pacing, dialogue, and the business of writing, all in one document.

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This collection covers the Art of Writing articles published during 1998. The book is 62,000 words in length and builds on the foundation of knowledge provided by Volume I of this popular series.

### **14. The Art of Science Fiction, Volume I - US\$10.00**

Have you missed any of the articles in the Art of Science Fiction Series? No problem. The first sixteen articles (October, 1996-December, 1997) have been collected into a book-length work of more than 70,000 words. Learn about science fiction techniques and technologies, including starships, time machines, and rocket propulsion. Tour the Solar System and learn astronomy from the science fiction writer's viewpoint. We don't care where the stars appear in the terrestrial sky. We want to know their true positions in space. If you are planning to write an interstellar romance, brushing up on your astronomy may be just what you need.

### **15. The Art of Science Fiction, Volume II - US\$10.00**

This collection covers the *Art of Science Fiction* articles published during 1998. The book is 67,000 words in length and builds on the foundation of knowledge provided by Volume I of this popular series.

## **16. The Astrogator's Handbook – Expanded Edition and Deluxe Editions**

The Astrogator's Handbook has been very popular on Sci Fi – Arizona. The handbook has star maps that show science fiction writers where the stars are located in space rather than where they are located in Earth's sky. Because of the popularity, we are expanding the handbook to show nine times as much space and more than ten times as many stars. The expanded handbook includes the positions of 3500 stars as viewed from Polaris on 63 maps. This handbook is a useful resource for every science fiction writer and will appeal to anyone with an interest in astronomy.