

Source 1b

“The History and Origins of Science Fiction.” The Mammoth Encyclopedia of Science Fiction, Ed. George Mann, Carol and Graf, 2001.

Dawn of the Magazines

While the themes and concerns of Scientific Romance continued to attract a large readership and to be explored by many authors in Britain

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and Europe in the years after the First World War (the works of OLAF STAPLEDON are a notable example), a rather different development was under way in the United States.

‘Pulp’ magazines and ‘Dime’ novels began to feature SF stories and found that their sales soared. This helped to popularize the emerging genre, generating a dedicated fan base that would later develop into both a readership and, ultimately, a good source of new authors.

However, the founding of *Amazing Stories* magazine in 1926 by editor Hugo Gernsback represented the first real attempt to put SF before the reading public as a distinct genre in its own right.

Gernsback was perfect for the job. He had previously worked as an editor on popular science magazines such as *Modern Electrics* and *Science and Invention*. Alongside scientific articles in these early magazines, Gernsback had regularly published examples of what he called ‘Scientifiction’ - fiction with a grounding in scientific fact. Most of it was stylistically stiff and rather too conventional, lacking the narrative drive and sense of adventure of the Scientific Romance of the day, in many cases simply acting as a text showcase for new technological ideas or gadgets. Indeed, Gernsback’s sole novel, *Ralph 124C41+* (1925), written along these lines, is generally regarded as unreadable today.

But with the founding of *Amazing Stories*, things changed. Gernsback obtained the rights to republish and serialize the works of Poe, Wells and Verne, and encouraged readers to submit stories with a distinctive technological edge. This in turn gave US writers an outlet for their work, and fostered a trend for technophilia in their fiction. The advent of science fiction as a mass-appeal genre was just around the corner.

Amazing Stories was an immediate success, and although many of its early stories had the same faults that had plagued the tales that had appeared previously in *Modern Electrics* and *Science and Invention*, the magazine did see the first publication of writers such as E.E. “DOC” SMITH and Jack Williamson. Much of this newer work was an early form of Space Opera, but it drew on existing genre ideas and adhered to the rules of Gernsback’s ‘Scientifiction’.

It was not long before the unwieldy ‘Scientifiction’ became known as ‘Science Fiction’. The genre as we know it today had received its name.

Gernsback’s reign at *Amazing Stories* was beset by financial difficulties and in 1929 he lost control of the magazine. It was sold on to other owners and continued to publish a range of stories, maintaining Gernsback’s standards but serializing too a number of good pulp novels that kept it operating as a buoyant concern.

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Gernsback himself went on to found other SF magazines such as *Scientific Detective Stories* and *Air Wonder Stories*, but never managed to repeat the success he had achieved with his former

magazine, the possible exception being *Wonder Stories* (an amalgamation of *Air Wonder Stories* and *Science Wonder Stories*), which ran for a healthy number of issues during the early 1930s.

Amazing Stories itself has been sporadically relaunched ever since, with its latest incarnation under the ownership of the games company Wizards of the Coasts ceasing publication as recently as the year 2000. It now looks set to make a return as an Internet-based concern.

However, where *Amazing Stories* had experienced financial problems during the early 1930s, a new magazine named *Astounding Stories* had thrived. *Astounding Stories* had started publishing just four years after *Amazing Stones* and, offering better rates of pay, had attracted many of the other magazine's best writers.

Initially, *Astounding's* stories had a more adventurous slant than those that appeared in *Amazing Stones*, and many writers were keen to join in with the sense of pulp fun that was prevalent in the magazine at the time. Scientific speculation was a constant feature but only when it helped the writer tell the story; essentially, *Astounding Stones* was a melodramatic pulp.

But, things were soon to change. When JOHN W. C. AMPBELL took over as chief editor of *Astounding Stories* in 1937, the GOLDEN AGE of science fiction was about to dawn.

John W. Campbell and the Golden Age of SF

The original Golden Age of SF is believed by many to have occurred during the war years of 1939-43. It was arguably the most important period in SF history, and saw the emergence of many of the classic writers, as well as the establishment of a more sober and serious tone for the genre. There is little doubt that this maturing of the genre was partly due to the Second World War and the effect that it was having on the mood of the time, but much of it can also be put down to the constant and attentive work of editor John W. Campbell.

A little more than a year after Campbell had taken over as editor of *Astounding Stones*, he had already changed the name. *Astounding Science Fiction* was the new legend that was printed on the front of each issue, and with this change in title came an important and revolutionary change in content.

The year 1939 saw the debuts of a number of important SF authors -ROBERT A. HEINLEIN, THEODORE STURGEON, A. E. VAN VOGT - as well as good work from established writers such as ISAAC ASIMOV and E. E. 'Doc' Smith. Campbell nurtured these authors, insisting that they worked through fully and logical!) any ideas they proposed and asking them to consider the sociological and psychological effects of their notions and to translate them into stories of greater maturity and depth. The authors responded enthusiastically and although it alienated some readers who had grown to admire the more pulp-orientated theme of the magazine, it turned *Astounding Science Fiction* into the true mouthpiece of the genre.

The Golden Age period saw the development of many of the key concepts of SF that would later come to define the field. The authors took ideas from the pages of the early pulps, and then subverted them, turning them into something new and even more exciting. Science became an integral part of main of the stories, as authors developed aspects of current scientific theories or ideas. Indeed, some of these writers were scientists in their own right.

It was from this heady brew that the important sub-genre of HARD SF was to be distilled, a form of powerfully science-loaded SF that would later, in a further incarnation, come to dominate the magazine.

During the years from 1939 to 1943 *Astounding Science Fiction* featured some of the most wonderful short stories and serializations ever to be written. Heinlein developed his FUTURE HISTORY in its pages, Asimov his Robot and Foundation sequences, Van Vogt published *Slan* and Smith his entire *Lensman* saga. Campbell encouraged them all, and when L. RON HUBBARD proposed his pseudo-science, 'Dianetics', Campbell encouraged him too. Campbell devoted himself

to the ideal of raising the standards of SF and providing readers with steadfast adventure stories that were nevertheless fully thought out and expertly realized. It is hard to quantify the overall effect that Campbell had on genre fiction; many authors credit him with having provided not just the impetus to write intelligent and coherent science fiction, but the actual ideas on which they were to base their stories and novels. The Golden Age period is a testament to his editorial skills.

Campbell remained in the editorial seat of *Astounding Science Fiction* until his death in 1971, overseeing a further change of name - to *ANALOG* - and a later reassessment of the magazine's contents. It continues to be published under the latter name today.

After the war years, there was an inevitable change in the way in which

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SF was both published and perceived. Magazines continued to thrive, and if *Astounding Science Fiction* was seen to be growing a little stale, a little too emphatic about the 'hard' sciences such as physics, chemistry and biology, then newer magazines such as *THE MAGAZINE OF FANTASY AND SCIENCE FICTION* and *GALAXY* were just beginning. These magazines saw a shift towards the 'softer' sciences such as psychology' and sociology, and demanded a higher level of literary ability from their writers. Authors such as PHILIP K. DICK and ALFRED BESTER were writing their own particular brands of SF, more experimental stories that would never have found a market in Campbell's *Astounding Science Fiction*. Over in Britain, *NEW WORLDS* was making an impact with similar material and during the 1950s its editor, John Cornell, would reprint many of the excellent stories that appeared in the American magazines of this time.

Source 2b

Attebery, Brian. "The magazine era: 1926-1960." *The Cambridge Companion to Science Fiction*, Ed. Edward James and Farah Mendlesohn, Cambridge University Press, 2003.

The best way to sneak in scientific content was to offer readers the traditional pleasures of popular fiction. John Cawelti, in his study of popular story-telling formulas, groups those pleasures under the headings of adventure, mystery and romance. Adventure could come in the form of conflict between humans and aliens or struggle against the unforgiving environment of outer space. Romance was usually supplied in perfunctory form – a fainting heroine hidden away by villains through most of the action and restored to the hero's arms at the last possible moment. It was mystery, in early magazine sf, that took the most distinctive form. Many stories in the pulp magazines revolved around solving a problem through scientific means: scientific information was doled out throughout the tale, usually by characters explaining to one another. This technique can be viewed as an aesthetic flaw; it certainly slows the action down and hardly demands realistic characterization. However, if one thinks of the sf story as a scientific mystery, in which the reader is invited to accompany the characters on a voyage of discovery, then these blocks of explanation – known in sf circles as 'infodumps' or, more kindly, as 'expository lumps' – function like the gathering of clues by a detective. [...]

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Fictional formulas in the pulp magazines

The kind of fiction published in the magazine revealed its popular science and formula fiction parentage more obviously than its literary sources. Characterization was perfunctory and plots were often thinly disguised westerns, mysteries or lost-world romances. Several writers helped to translate these older

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formulas into what is now generally called 'space opera'. [...]

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Source 3b

Westfahl, Gary. "Space Opera." The Cambridge Companion to Science Fiction, Ed. Edward James and Farah Mendlesohn, Cambridge University Press, 2003.

Space opera is the most common, and least respected, form of science fiction. Its popularity in magazines of the 1920s and 1930s helped establish science fiction as a genre, and it continues to find appreciative readers, even while scorned by learned commentators. To many, space opera is synonymous with sf, and to this day, average citizens asked to define sf might respond, 'You know, the Star Trek, Star Wars stuff', which is to say, space opera. [...]

Despite signs of changing attitudes, space opera has garnered little critical attention; only a few scholars have attempted anything resembling a rigorous definition. Necessarily, anyone discussing the nature, parameters and history of space opera at length breaks new ground.

Wilson Tucker's pioneering 1941 definition provides a useful framework for describing the subgenre: 'In these hectic days of phrase-coining, we offer one. Westerns are called "horse operas", the morning housewife tear-jerkers are called "soap operas". For the hacky, grinding, stinking, outworn spaceship yarn, or world-saving for that matter, we offer "space opera".' Tucker suggests that three characteristics define space opera.

First, space opera involves a 'space-ship': like the nautical fiction from which it borrows terminology and tropes, space opera depicts journeys through uncharted realms in vessels bringing humans into contact with the mysterious stuff separating their safe harbours. Even narratives occurring on the surfaces of alien planets must have nearby spaceports, creating the possibilities of departures to or arrivals from other worlds. Stories on worlds without access to space travel, or stories featuring travel to other planets by mystical means, are better termed planetary romances.

Second, space opera is a 'yarn'-- an exciting adventure story. Typically positing a universe filled with human or alien spacefarers-- some hostile,

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some friendly-- space opera is a literature of conflicts, usually with violent resolutions. [...]

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Source 4b

"Space Opera." The Encyclopedia of Science Fiction. Ed. John Clute and Peter Nichols, St. Martin's Press, 1993.

SPACE OPERA When radio was the principal medium of home entertainment in the USA, daytime serials intended for housewives were often sponsored by soap-powder companies; the series were thus dubbed "soap operas". The name was soon generalized to refer to any corny domestic drama. Westerns were sometimes called "horse operas" by false analogy, and the pattern was extended into sf terminology by Wilson tucker in 1941, who proposed "space opera" as the appropriate term for the "hacky, grinding, stinking, outworn, spaceship yarn". It soon came to be applied instead to colourful action-adventure stories of interplanetary or interstellar conflict. Although the term still retains a pejorative implication, it is frequently used with nostalgic affection, applying to space-adventure stories which have a calculatedly romantic element.

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Source 5b

"Aliens." The Encyclopedia of Science Fiction. Ed. John Clute and Peter Nichols, St. Martin's Press, 1993.

ALIENS Early US pulp-magazine sf in the vein of Edgar Rice Burroughs usually populated other worlds with quasihuman inhabitants-- almost invariably including beautiful women for the heroes to fall in love with-- but frequently, for melodramatic purposes, placed such races under threat from predatory monsters. The specialist sf magazines inherited this tradition in combination with the Wellsian exemplars, and made copious use of monstrous alien invaders; the climaxes of such stories were often genocidal. Edmond Hamilton was a prolific author of stories in this vein. In the early SPACE OPERAS meek and benevolent aliens usually had assorted mammalian and avian characteristics, while the physical characteristics of nasty aliens were borrowed from reptiles, arthropods and molluscs (especially octopuses). Sentient plants and entities of "pure energy" were morally more versatile. In extreme cases, alien allies and enemies became straightforwardly symbolic of Good and Evil: E.E. "Doc" smith's Arisians and Eddorians of the Lensman series are secular equivalents of angels and demons.

Occasionally early pulp-sf writers were willing to invert their Darwinian assumptions and put humans in the role of alien invaders - significant early examples are Hamilton's "Conquest of Two Worlds" (1932) and P. Schuyler miller's "Forgotten Man of Space" (1933)-- but stories focusing on the exoticism of alien beings tended to take their inspiration from the works of A. MERRITT, who had described a fascinating mineral life-system in *The Metal Monster* (1920; 1946) and had transcended conventional biological chauvinism in his portrayal of "The Snake-Mother" (1930; incorporated in *The Face in the Abyss* 1931). Jack Williamson clearly showed Merritt's influence in "The Alien Intelligence" (1929) and "The Moon Era" (1932). [...]

While pulp sf writers continued to invent nastier and more horrific alien monsters during the late 1930s and 1940s-- notable examples include John W. CAMPBELL Jr's "Who Goes There?" (1938), as Don A. Stuart, and A.E. van vogt's "Black Destroyer" (1939) and "Discord in Scarlet" (1939)-- the emphasis shifted towards the problems of establishing fruitful communication with alien races. During the WWII years human/alien relationships were often represented as complex, delicate and uneasy. In van Vogt's "Cooperate or Else!" (1942) a man and a bizarre alien are

castaways in a harsh alien environment during an interstellar war, and must join forces in order to survive. In “First Contact” (1945) by Murray Leinster two spaceships meet in the void, and each crew is determined to give away no information and make no move which could possibly give the other race a political or military advantage-- a practical problem which they ultimately solve. Another Leinster story, “The Ethical Equations” (1945), assumes that a “correct” decision regarding mankind’s first actions on contact with aliens will be very difficult to achieve, but that priority should definitely be given to the attempt to establish friendly relationships; by contrast, “Arena” (1944) by Fredric brown bleakly assumes that the meeting of Man and alien might still be a test of their ability to destroy one another. (Significantly, an adaptation of “Arena” for the tv series star trek changed the ending of the story to bring it into line with later attitudes.)

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Source 6b

“Scientists.” The Encyclopedia of Science Fiction. Ed. John Clute and Peter Nichols, St. Martin’s Press, 1993.

SCIENTISTS Scientists in pre-20th-century sf often exhibited symptoms of social maladjustment, sometimes to the point of insanity; they were characteristically obsessive and antisocial. [...]

By the end of the 19th century, however, other images of the scientist were beginning to appear. The US public made a hero of Thomas Alva Edison (1847-1931), and this admiration for the clever inventor is reflected in much popular fiction. [...]

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Scientists in the early sf pulps were often eccentric and absentminded, and the demands of melodrama required many to turn their hands to criminal enterprises, but they were rarely outright nuts, after the fashion of such cinematic figures [...]

As pulp sf matured there was a significant shift in the characterization of the scientist hero. Especially in *Astounding* science-fiction, the role of the theoretical genius was de-emphasized relative to that of the practical-minded engineer; archetypal examples of this species were the personnel of George O. Smith’s *Venus Equilateral* (coll 1947), forever scribbling equations and designs on the tablecloths in Joe’s Bar. The presumed essence of real genius remained as wayward as ever, however: Henry Kuttner’s inventor Galloway Gallegher always made his marvelous machines while blind drunk and could never remember afterwards how he had done it. Hero-worship of the scientific genius was further extended by Isaac Asimov, whose Foundation series was the first notable work to elevate a social scientist to that status. Outside the sf magazines, a more realistic image of the work and social situation of the scientist was depicted in E.C Large’s cynical *Sugar in the Air* (1937), which features a visionary and idealistic scientist at odds with his stupid and irrational employers. In the post-WWII decade this kind of image became much more common-- notably in several novels by Edward Hyams, including *Not in Our Stars* (1949), and in many magazine stories.

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Source 7b

“Technology.” The Encyclopedia of Science Fiction. Ed. John Clute and Peter Nichols, St. Martin’s Press, 1993.

TECHNOLOGY Although various literary traditions supplied inspiration and continued support to proto science fiction, it was the perception of the power which the new MACHINES of the Industrial Revolution had to transform the world which gave birth to sf itself, inspiring Jules Verne’s imaginary voyages, George Griffith’s future-WAR stories, H.G. Wells’s scientific romances, the hi-tech Utopian fantasies of Edward Bellamy and others, and the mechanized dystopian nightmares which dissented from them. The demands of melodrama have always ensured that, even in those specialist magazines whose editors were outspoken champions of technological advancement-- most notably Hugo GERNSBACK and John W. Campbell Jr-- most stories were about dangerous products or about technology running out of control. Many particular aspects of general technological progress require individual treatment as themes in sf: automation, cities, computers, CYBORGS, DISCOVERY AND INVENTION, GENETIC ENGINEERING, NUCLEAR POWER, POWER SOURCES, ROBOTS, ROCKETS, SPACESHIPS, TRANSPORTATION and WEAPONS.

The attitude of sf to technology has always been deeply ambivalent. The 18th-century idea that moral progress and technological progress were inseparably bound together has never been universally accepted, and literary images of the future have always recognized doubts as to the essential goodness of technology, even when their purpose has been to argue that technological progress is the principal facilitator of moral progress. GENRE-sf writers may take it for granted-- it is a central ideological tenet of almost all hard sf-- but writers of futuristic fantasy outside the genre have always been more likely to take the position that moral, social and spiritual values essential to human happiness are actually placed in hazard by technological advancement. [...]

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Sf is, of course, the natural medium of anti-technological fantasies as well as of serious extrapolations of technological possibility. There is a good deal of pastoral sf which glorifies a nostalgically romanticized quasi-medieval way of life, often with PSIPOWER-jargonized magic thrown in to help with the chores. Such imagery bears no relation whatsoever to the brutal reality of actual medieval existence, but its phenomenal psychological power is even more elaborately reflected in modern genre fantasies and stories of life on other worlds and the depiction of alien societies frequently deal in similar imagery. No doubt the appeal of low-tech societies to sf writers has much to do with the fact that the strategic elimination of known technology is easier by far to accomplish than elaborate technological innovation, but there is clearly also some powerful force at work endowing such visions with a special glamour. [...] It is worth noting, however, that in pastoral writings within genre sf, rather than from outside it, the joy and triumph of technological rediscovery and redevelopment provide a frequent theme [...]

If genre sf needs a defence, it is quite simply that technological progress has allowed us to become in almost every way healthier, wealthier and in some senses wiser, and may well continue to perform that role. If Gernsback’s advocacy of that case was naïve and Campbell’s eccentric, the writers for whom they created a home were sufficiently various, intelligent and heterodox to make sure the question was examined in all kinds of ingenious ways. [...]

Like the Romantics before them, genre-sf writers have generally been on the side of Faust, convinced that the quest for knowledge was a sacred one, no matter how fondly a jealous God might prefer blind faith. Characters in bad Hollywood monster movies might be able to sign off with a resigned admission that “there are things Man was not meant to know”, but nothing could be more alien to the ethos of genre sf. Even in early pulp sf, technology was a means rather than an end, and, however much Campbell’s writers were inclined to the celebration of the competence of the engineer,

there remained a visionary element in their work which centralized the conceptual breakthrough as the peak experience of human existence. The hi-tech future of pulp sf was not the “Utopia of Comforts” so bitterly criticized by such skeptical writers as S. Fowler Wright but rather a reaching-out for further horizons. SPACE FLIGHT became and remained the central myth of sf because it was the ultimate window of opportunity, through which the entire Universe could be viewed-- and, ultimately, known. In genre sf, the ultimate aim of technological progress is, in the words of Mack Reynolds, “total understanding of the cosmos”. [...]

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Source 8b

Healy, Raymond. 1957 Introduction. *Adventures in Time and Space*, Ed. Healy and J. Francis McComas, 1945, Random House, 1957, xix-xxiv.

A WORD ABOUT the creation of this book. It was conceived in 1944, underwent a gestation period of some fourteen months, and was born in the spring of 1946, half a year after the Atomic Age dawned over Hiroshima.

Critics have called this the “definitive” anthology of science fiction stories. We agree-- not because that appraisal flatters us, but because it is an accurate judgment of the stature of the magazine editor who first published most of the stories in this collection.

That man was John W. Campbell, Jr. And perhaps no one man ever had a greater influence over a literary form, for Campbell single-handedly revolutionized the writing of and-- possibly more important-- the thinking in modern science fiction.

He created what all of us-- readers, writers and editors-- refer to as the Golden Age of twentieth-century imaginative literature. You are about to read the golden bests of that golden time. Prior to Campbell's advent as editor of *Astounding Stories* in 1937, modern science fiction had badly deteriorated from the standards set by its great founders, Wells and Verne. While some editors strove for genuinely interesting scientific speculation, they allowed such challenging postulations to be presented in a framework of atrocious prose. Generally, however, magazines nominally presenting science fiction offered science that was claptrap and fiction that was graceless and dull.

Campbell changed all that. Previous to his appointment as editor of *Astounding*, he had, under the pseudonym of Don A. Stuart, broken contemporary barriers with stories that were first-rate fiction by any criteria. (You will find two of the best by “Stuart” in this anthology.) He applied his own writing formula to his editorial task, personally developed writers who could work within that formula and even improve on it ... and the result was a thing of joy forever!

Like so many revolutionary ideas, Campbell's literary doctrine was quite simple. Science fiction, he argued, should be just that: a story wherein equal stress is placed on each of the two definitive words. In other words, if you were writing for Campbell, you couldn't get away

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with anything. Your science had to be a logical extrapolation of known fact; it had to be presented within a framework of literate, entertaining fiction. As far as “Campbell's law” is concerned, a clumsy sentence or weak characterization is just as taboo as confusing a planet with a star. (And you'd be surprised how many would-be writers still do that latter with appalling regularity.)

Again speaking generally, during the pre-Campbell era the emphasis was on the science and the devil take the fiction. Today, as will be noted later, we are-- self-consciously perhaps-- preoccupied with our prose and too neglectful of the imaginative potential in our science.

As a corollary to his main idea, Campbell demanded detail. If, for example, you were writing about a civilization of the far future on a Venus-type planet, he demanded an infinite variety of detail on such everyday minutiae of life as clothes, weather, eating habits, food, speech, housing, sports, money, politics and the like. That called for strenuous exercise of the imagination. It demanded intense concentration, for God help you if you slackened your grip just a trifle and allowed the slightest inconsistency to creep into your narrative. But this rigid obedience to Campbell's discipline produced some of the finest speculative writing ever published.

Perhaps the most radical of his ideas was Campbell's belief that humor had a place, a big place, in science fiction. (See the zany romps of Lewis Padgett herein.)

Another of Campbell's mighty virtues was his liberality. A writer could speculate in any field and the editor egged him on, as long as the scribe's conjectures were plausible and ably presented. Robert A. Heinlein, possibly the greatest of the giants of those days, plotted a future history of the earth, from the twentieth to the twenty-seventh century. Within this framework, Heinlein wrote two novels, six novelettes and four short stories, on such varied subjects as selective breeding for human longevity, housing and religious fascism.

To digress a moment: Heinlein's "future history" wasn't enough to keep him busy. (Writers were prolific in those days!) He concocted a number of ideas that had nothing to do with his "history" and executed these under the pseudonym of Anson MacDonald. (You might compare the offerings of the "two" we have given you.)

Returning to Campbell's liberality: A. E. Van Vogt wrote novels on non-Aristotelian logic; Anthony Boucher, mystery novelist coaxed into science fiction by Campbell, brought an entirely new approach to robotics. Writing in 1942, Lester Del Rey described a blowup in an

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atomic power plant which, besides being a fine story, is regarded by today's experts as uncanny-- and very disturbing prophecy.

It is almost impossible to describe to a later generation the eagerness with which we of that era grabbed each new issue of *Astounding* as it appeared on the newsstands or in our mailboxes. Each number guaranteed a feast of wonder. We gobbled up Heinlein's visions of the future, savored Bester's sadly lovely pictures of man's proneness to fatal error, choked with laughter over Padgett's caustic ribbing of all we held dear, then, the banquet over but still not sated, complained because the last course was finished so soon.

This happy time lasted from 1939 through 1945. Those dates are approximate, for no two devotees will agree as to precisely when it began and when it ended.

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Source 9b

"Space Travel." The Mammoth Encyclopedia of Science Fiction. Ed. George Mann, Robinson, 2001.

SPACE TRAVEL The navigation of SPACE is a theme that is explored in the vast majority of SF novels and stories. From the use of modern technology to get us to the Moon and Mars, to vast interstellar GENERATION STARSHIPS, to quick and nimble faster-than-light vessels, to wormhole and spacetime manipulation, SF authors have seen travel through space as a fundamental stepping stone on the road into the future.

Many early pulp and SPACE OPERA stories made light of the comings and goings of interstellar craft, and it is not until the almost banal functionality of ROBERT HEINLEIN'S *Rocket Ship Galileo* (1947) and ARTHUR C. CLARKE'S *Prelude to Space* (1951) that we see a true attempt to describe the boundaries that had to be crossed before mankind would ever make it into space. [...]

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It seems sure that for as long as SF exists, its characters will be travelling through space, encountering all manner of strange and outlandish phenomenon and meeting a variety of bizarre ALIEN life forms. For as long as SF has existed, humanity has desired to reach out into space. In SF it can do so, and one of the most optimistic aspects of the genre is the manner in which it envisages a human future amongst the stars. Indeed, it seems ever more possible that scientists will eventually begin to look to SF as a provider of notions and ideas that may aid the future development of interstellar vessels.

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