

Space: Sociology's Forsaken Frontier¹

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Introduction: Identifying the Problem

The criticisms identified in the discussions that follow illustrate a curious fact. The study of social patterns related space from a sociological perspective remains non-existent as an organized and mainstream subdiscipline even as the space age continues (Pass 2004a; Pass 2004b). Space is sociology's forsaken frontier in the sense that the discipline has largely failed to study astrosocial phenomena (i.e., social and cultural patterns related to space). Accordingly, this essay addresses sociology's lack of interest and its resistance.

In contrast, making the case for space is not an issue for a significant proportion of the public. A June 2004 Gallup Poll (Carlson 2004) found that 68% of Americans support the space program, even under a climate of underwhelming exposure. It remains important to take into account the public's significant support level. In fact, a second curious fact relates to the opposing patterns of interest in space held by the sociological community and the public. Unless sociologists are collectively *abnormal* in this regard, more than 50% of them should be interested in the space program (in addition to general space issues) to an appreciable extent and thus

should be supportive of astrosociology. The overriding question in this regard is this: Where have they been? That is, why is it that astrosociology is not a long-established subdiscipline?

At this early juncture, five major categories of sociologists are identifiable in terms of their relationship to the establishment of astrosociology:

- (1) *close-minded critics* who ridicule astrosociology and refuse to debate;
- (2) *open-minded critics* who question the need for astrosociology though are willing to debate important points;
- (3) *indifferent sociologists* who display no obvious reaction to the proposal to create this new subfield (likely the largest category);
- (4) **potential (covert) advocates** of astrosociology who express interest though possess little demonstrable commitment; and;
- (5) **current (overt) advocates** of astrosociology.

This paper directly addresses the first three categories of sociologists. These discussions may benefit potential advocates by assisting them to overcome their hesitancy and perhaps even to make a career change embracing this newly emerging subfield. As such, potential advocates are a secondary target audience (although an important one). Advocates should find value in this paper as a resource to (1) help solidify their existing positions and (2) develop favorable arguments utilizable in debates with critics they may encounter. Currently, the relative numbers of sociologists in each of these categories remains unknown.

These criticisms come from a handful of sociologists as received through email correspondence and those found in web logs (i.e., blogs).² The former most often address legitimate concerns while the latter tend to present their resistance in the form of sarcastic and sardonic rhetoric. At this point, there is actually a greater number of overt supporters than overt detractors.³ However, one must assume that significant levels of indifference and resistance exist due to the longstanding absence of a subdiscipline dedicated to the study of astrosocial phenomena.

Taken together, these sources provide the known criticisms in that they represent the obvious recurring themes even as they comprise a small subcategory of all sociologists. Their articulation comes from only a few of the open-minded and close-minded critics. Indifferent sociologists represent a more difficult category to comprehend. For this reason, the criticisms in this essay and their responses may not fully address the concerns of most indifferent sociologists who remain in the indifferent category until they voice an opinion, either favorable or unfavorable. That is, the criticisms presented here may not account for the dearth of astrosociological literature. Nevertheless, the dialog has begun in the effort to gain an understanding of the forsaken nature of space.

Space as sociology's forsaken frontier represents an enduring problem affecting the study of astrosocial phenomena and the very establishment of a subdiscipline dedicated to it. This exercise seeks to make the case for the establishment of astrosociology through the presentation and then refutation of known criticisms. Admittedly, most of the contents to follow involve refutations by a strong advocate of astrosociology. As such, this essay does not intend to offer objective data relevant to the problem identified here. It serves as a probative effort aimed at an early exploration of the problem with the secondary objective of furthering the establishment of astrosociology. While a few criticisms are evident, full understanding of the entire details of historical resistance requires a substantial level of data collection and thus remains beyond the scope of this presentation.

More precisely, the focus here is squarely upon three major related questions. The first question relates to the central criticism. **Does the study of humans in space represent a non-legitimate substantive area on a fundamental level?** If this is indeed the case, then astrosoci-

ology becomes an unworthy proposition. The second question characterizes some of the ancillary criticisms that relate directly to the central criticism. **What aspects of the central criticism point to its unworthy character?** The third question addresses another of set of ancillary criticisms related directly to the discipline of sociology. **Does the creation of a new subfield called *astrosociology* even represent a constructive development for the discipline?** This third question addresses the need to construct a new subdiscipline dedicated specifically to the study of astrosocial phenomena in the context of sociology's historical failure to do so. In order to answer the third question affirmatively, a convincing case for astrosociology is required that is acceptable to the mainstream sociological community. It is necessary to demonstrate that social patterns related to space comprise a dimension of social life worth studying based on the same criteria compelling sociologists to study other social phenomena. It exists, so therefore it deserves serious attention!

The current climate of space as sociology's forsaken frontier requires explanation partly as a way to determine how to overcome the historical combination of indifference and resistance. One central criticism that may prove to be the root cause of resistance receives attention first, followed by several ancillary (derivative) criticisms. This approach assumes that each of these criticisms is either inconsequential or at least unconvincing enough to forsake both space and astrosociology on a continuing basis. The assumption that astrosociology represents a relevant, though ignored, substantive area, serves as the backbone for arguments supportive of this new subfield (see Pass 2004b). The rejection of the central criticism casts a great shadow of doubt upon all ancillary criticisms as well. Similarly, rejection of a single ancillary criticism weakens the central criticism.

Central Criticism: “Space Represents a Forsaken Territory”

In consideration of all the critical remarks directed at the establishment of a subfield dedicated to the study of astrosocial phenomena, one seems to be the foremost rationale for the resistance among critics. This *central criticism* receives brief attention followed by ancillary criticisms directly associated with it. The first set of ancillary criticisms (out of two) expands upon the central criticism most directly in the sense that they address variations on the idea that space exploration represents an unimportant area of study. The second set of criticisms involves potential harm inflicted on the sociological discipline should the “sociology of space” ever become formalized.

Just as many citizens of space capable nations question the necessity of a space program, many sociologists question the necessity of a new subdiscipline dedicated to the study of it. Study of astrosocial phenomena from a sociological perspective remains a low priority for the discipline. Thus, it remains important to explain the social reality of sociology’s absence in the dedicated study of astrosocial phenomena. The main assumption of this essay relates to the suggestion that *space* represents a substantive area beyond the boundaries of mainstream sociology. Space is sociology’s forsaken frontier because it remains largely unexplored by sociologists, but this is so because of its evaluation as a discreditable area of study.

Therefore, the primary hypothesis serving as the crux for this entire essay involves space itself as an inappropriate subject matter as articulated below.

Space lacks legitimacy as a substantive area and consequently cannot be worthy of sociological inquiry.

That is, space represents a forsaken territory today because its characterization by the sociological discipline as an unimportant and impractical aspect of human life began at the very beginning of the space age, and this general attitude persists even as space becomes more relevant to human societies. At best, space is simply something to disregard lest credibility be lost (i.e., a professional stigma). At worst, sociologists fail to study astrosocial phenomena because space represents a taboo of sorts that very few seem willing to violate. Proposing a new subdiscipline devoted to space not only violates this taboo but also challenges all notions that characterize space as an illegitimate topic of study. It is thus important to understand the nature of this social reality, but also why it actually represents a disservice to the discipline.

And while it is too early to properly understand all of the characteristics of this view of space as sociology's forsaken territory, it nevertheless remains important to take the first step in attempting to do so. This preliminary examination of the avoidance of the sociological treatment of space, in the context of the establishment of astrosociology, represents an opportunity to consider the veracity of the known early criticisms from an advocate's point of view. Articulation of the known criticisms remains secondary to the main purpose of this essay. The major focus centers most strongly on the presentation of challenges to these criticisms in the context of advocating the establishment of astrosociology. This is no easy feat as, even at the dawn of the twenty-first century, advocates attempt to establish this new subfield in the midst of a negative climate exemplified by the central criticism.

Criticisms Focusing on Space as the Forsaken Frontier

The following secondary criticisms address disparaging viewpoints related most strongly to space as a substantive area. These criticisms arguably contribute to the absence of any obvious organized effort to study astrosocial phenomena. The focus here is squarely upon the legitimacy, or lack thereof, of space with implications for the establishment of astrosociology. The next section addresses the establishment of astrosociology directly.

While space is sociology's forsaken frontier, it nevertheless represents an existing frontier. With this in mind, then, does it make sense to treat space as if it does not exist? As a challenge to this longstanding position, the focus of astrosociology is precisely upon the forsaken frontier of space. Whether social interaction occurs directly within this territory or on Earth as an adjunct to it (e.g., preparing a space probe, launching a spacecraft, analyzing astronomical data), the focus of it is *space*. Sociology's failure to treat space as a legitimate territory, its implications, and reasons to end this unproductive trend serve as the foci of this inquiry.

Ancillary Criticism: "You Must be Crazy to Study Space." This criticism strongly infers that sociologists should never study social patterns related to space. If they do, they deserve placement on the figurative fringe (outer space?) of the discipline by the rest of the sociological community. Under such circumstances, one could have predicted that advocates would receive a certain amount of contempt. Current efforts to promote astrosociology find clear evidence of this tactic among some critics. This factor is important as it may go a long way

toward dissuading interested sociologists, even covert advocates, from the study of space (more precisely, astrosocial phenomena).

The very mention of *space* causes a reaction characterized by ridicule and consternation among a very small, yet vocal, number of sociologists. It makes many sociologists' eyes roll, even those claiming to be largely indifferent. Furthermore, one does not dare utter the phrase "outer space" too often or too loudly around the "wrong" people in order to avoid the label of a "kook" or "weirdo." A larger number of others who disfavor the notion of astrosociology or remain indifferent probably hold similar views, reflecting the discipline's ignorance regarding astrosocial phenomena. Humorous depictions of the study of space and direct attacks on advocates do very little to resolve legitimate concerns, however. Something about the term "space," when referring to the territory beyond Earth rather than the traditional sociological definitions, definitely leads many to view anything associated with it as equivalent to some type of pseudoscience, even before detractors understand the nature of the subject matter, its relevance, or the general approach to studying it.

Designation of advocates as *space cadets* or *lost in space*, and much worse, simply for their attempt to create the subfield of astrosociology, involves tangible consequences. This is not the first effort to develop the "sociology of space" (Pass 2004b) though no previous attempts have succeeded partly due to the academic persecution of overt supporters. Direct attacks on the advocates point out the difficulty of focusing attention on this subject matter as a serious set of social phenomena. Anyone who openly considers himself/herself an *astrosociologist* can expect to be a target of some sociologists' mocking retorts. As an ongoing theme, the ultimate acceptance or rejection of astrosociology depends upon whether human behavior related to space

is an important substantive area for sociology as a discipline. Mockery aside, the future of astrosociology depends upon the successful recruitment of advocates among open-minded critics, indifferent sociologists, and potential advocates. The assistance of close-minded critics remains unlikely. Nevertheless, it is important for all to understand the details regarding this proposal so their acceptance or rejection of this new subdiscipline is based on objective information rather than uninformed biases.

However, why does the subject of *space* result in this type of condescending reaction? Many sociologists consider the topic itself unworthy of sociological investigation. Is NASA irrelevant to American society? Is the ESA irrelevant to the citizens of the European Union? If the answer to such questions is truly “yes,” then astrosociology has no place in sociology. Why are China and even Brazil pursuing a robust space program? If the aerospace industry is irrelevant or human societies decide to stop developing their space programs, then this entire exercise is just a waste of time. Three other questions deserve consideration. Why does sociology continually fail to address astrosociological issues when they obviously exist? Space is not going away, and humans will expand into it, so what alternative to astrosociology is there? Can sociology continue to forsake space?

These issues deserve exploration. Until addressed to the full satisfaction of the discipline, progress within the astrosociological subdiscipline can only maintain itself at a slow rate. This reality becomes ever the more dangerous as critics seek to destroy the credibility of astrosociology during its very infancy. While valid concerns do deserve attention, name-calling remains an unprofessional form of conduct. Moreover, the negative portrayal of those advocating the

study of space exploration falls short as a reason to deny other interested scholars the support and resources to pursue it.

Ancillary Criticism: “Space is Nothing but an Empty Vacuum.” Why does space lack legitimacy as a topic of sociological inquiry? Part of the answer is traceable to the perception of space as a marginal aspect of social life deserving little attention (Pass 2000b). After all, the great bulk of human behavior takes place on Earth. As of October 4, 2004, only 434 human beings have been in space during the 47 years of the space age (including all civilians).⁴ This equates to only 9¼ individuals per year. So, how important can it truly be? An unknown number of sociologists simply disfavor the very idea of the space program in the United States to an extent that any call to study such a program results in outright dismissal, even ridicule, without a fair hearing as to its value. For many of these close-minded critics, robotic missions represent the maximum extent of space exploration, and human missions remain intolerable. Most critics, including many open-minded critics, view space as devoid of human activity and therefore unimportant to sociology.

This type of view is shortsighted in the sense that it focuses on the rudimentary space infrastructure of contemporary societies, at the early stages of human flight (within the Earth’s atmosphere or beyond it). The *space age* has just begun. Even so, human groups have marveled at the heavens for all of humanity’s history on Earth. The history of the space age to this point has witnessed the dedication of thousands of people. The two human beings currently in low Earth orbit aboard the *International Space Station* serve as the “tip of the iceberg” in terms of the

number of individuals dedicated to space. At the present, the great majority of these individuals reside on the Earth.

In time, human activities in specific parts of space will carve out more finite social settings within this vast frontier. Humans already explore space on a limited scale, and humanity continues to learn much about the universe in the process. Currently, the most common social setting is low Earth orbit. While not very exciting to many, this represents a practical start at an early point in the history of the space age. Of course, other social settings also exist. Humans and robots have visited the Moon. Rovers continue to explore Mars. Robotic missions visit other space bodies. Space is the territory of choice for exploration among astronomers, astrobiologists, and cosmologists, and others. Thus, astrosocial phenomena exist both on Earth and in space, and the latter forms will only increase. Again, a central question emerges from these facts: if human beings continue to interact with one another on space-related projects and within aerospace organizations, then why does sociology forsake this frontier?

In the future, humans will expand into this largely unexplored territory as they have in every territory on Earth. Moreover, while the expansion of human societies into space represents a logical extension of history, the discipline of sociology largely ignores social settings in space as if this territory was empty; a frontier in which very few humans will ever explore. A good analogy for critics' purposes is the vacuum of sociological inquiry appropriately mirroring the "vacuum of space." In this context, space is equated with *empty* space and thus *unworthy* of sociological inquiry. It is not difficult to counter this position. Just as space is not empty of celestial phenomena, space even now is not devoid of astrosocial phenomena (astronomical research, for example). As such, space is a *legitimate* territory worthy of sociological attention

precisely because human interactions within it exemplify *legitimate* social settings. The proposal to establish astrosociology serves to redress this void (vacuum) found within the discipline of sociology. As a territory, space is indeed nearly empty in terms of humans in it. On the other hand, human behavior on Earth focused on space represents a significant beginning, and human behavior actually taking place in space will become more significant as time passes.

In summary, then, in order for sociology to reject space as consisting of potentially important social settings, the assumption must be that no significant human behavior occurs within it. Critics apparently project the current limited presence of humans in space well into the future without much social or cultural change. Objectively, any territory or frontier that contains social interaction is relevant to sociological inquiry. This objective reality must remain forefront in one's mind when considering the actual relevance of astrosocial phenomena to human societies on multiple social dimensions. The "empty vacuum" model is not an accurate depiction of space. On the other hand, this depiction does accurately characterize sociology's historical approach to the study of astrosocial phenomena. As such, this ancillary criticism is unconvincing due to its inaccurate assessment of space, both in terms of its physical nature, and its increasing significance to human societies.

Ancillary Criticism: "Space Exploration Wastes Societal Resources." Critics who present this argument favor the elimination or severe limitation of access to space based on its characterization as a waste of taxpayers' dollars or, at best, a waste of time. This view generally supports solving "Earthly" social problems before moving into space (that is, never). The natural extension of this logic is that if pursuing a space program is a waste of time and resources, then

the sociological study of it is just as wasteful. The perceived waste of space exploration represents a critical ancillary criticism, so it receives extended attention. While this discussion focuses upon the United States, these arguments are generalizable to all space capable nations to some extent.

It is important to realize that NASA's budget is rather modest compared to those of other federal agencies. NASA's 2005 budget is projected at about to \$16.2 billion (only .07 percent of the total federal budget) (NASA.gov Budget 2004), or about fifteen cents per person per day. Even including a roughly \$1 billion increase over 2004, the cost remains inconsequential for the average citizen. As should become evident, however, the cost is only half of the equation. Nevertheless, many critics complain about waste and cost overruns based on past performance. One can hope that the level of waste will decrease with the implementation of the President's new space policy (*A Renewed Spirit of Discovery*⁵) and NASA's reorganization initiative. There are no guarantees, though there is a certain level of hope for greater success when one compares the present efforts against the long-term directionless operations characteristic of the agency since the termination of the Apollo program. A credible plan for space exploration, long overdue, finally exists.

One should not expect NASA's greatest benefits to be measurable in dollars. Direct and indirect applications of NASA research efforts yield benefits for the average person, whether supportive of the space program or not. Rather than a "waste of money," the space program of a particular space capable society serves to solve *social problems* on Earth (Pass 2004b). Someday, NASA's research may even contribute to saving our species. (The dinosaurs would have benefitted from a good defense against asteroids!) Of more immediate concern, one only

needs to consider a few of the obvious examples in the fields of medicine, environmental and other Earth sciences, computer science, industrial design, consumer goods, aeronautics, astronautics (of course), law enforcement and military weaponry, and Earth-based engineering to gain a general appreciation. NASA-sponsored research contributed strongly to the development and improvement of technologies such as the laser, miniaturization and reliability of electronics, satellites (including GPS), x-ray machines, CAT scans, and advancements in public flight safety. The Earth sciences constitute an important component of space exploration. For example, NASA satellites, including advancements in remote measuring instruments, contribute to improving our understanding about hurricane formation and prediction *now*. The applications of such technologies to terrestrial social problems prevent injuries and save lives on Earth. In reality, then, a great number of the benefits do not manifest themselves as monetary gains even though they are just as important for a particular society. The pursuit of space exploration produces improvements in social conditions. While the direct return on investment is difficult to measure, estimates range from seven to ten dollars for each dollar spent by NASA.

The public spinoffs listed above refer to concrete benefits (see *NASA Spinoff Online* for more examples). However, they do not really hint at NASA's contribution to the even more nebulous effects beneficial to the American population. For example, as NASA officials frequently mention, space exploration serves as a good way to inspire, train, and employ scientists and engineers from succeeding generations better than any other human pursuit. Additionally, NASA's well-known phrase "inspiring the next generation of space explorers" aimed at schoolchildren, reflects cultural values supportive of continuing human exploration of unknown, even forsaken, territories. NASA exists because American values demand a certain

level of space exploration and pursuit of the space sciences. The cultures of other space capable societies, and even space incapable societies, are similar in this regard.

In addition to public benefits characteristic of the space age to date, private participants in space will increase their participation over time so that private benefits begin to manifest themselves. As the space age continues, corporations will seek to open and then expand new markets related to space while small entrepreneurial companies seek to find niches in which they can pursue intrinsic objectives and/or profits. Independent efforts will increase even while important relationships with NASA remain intact. While their reasons for participating in a new privatized space economy may differ, their privatized benefits will add to NASA's public spinoffs. This newly emerging pattern of astrosocial phenomena at the macro level will result in an increase of their overall importance to society.

Astrosocial phenomena, like all social phenomena, are fundamental elements of a given society and thus integrated into that social system. The pursuit of space-related activities by its very nature contributes to solving social problems of all types. Space science and technology advancements often result in practical earthbound solutions to social problems. Thus, attempts to calculate the benefits of pursuing space exploration cannot rest solely on monetary considerations, nor can an analysis of the infant space programs of the world shed light on what the future brings as science and technology continue to advance. The significance of space exploration lies largely in the very pursuit of it due to its cultural ramifications (Pass 2004b). Additionally, practical benefits present themselves over time in ways not always predictable beforehand. Though secondary in nature, the practical benefits serve to help a particular society progress in

overt ways. The intangible benefits, on the other hand, combine to provide that society with a general sense of direction and purpose.

Finally, while the debate about the wasteful nature of space exploration rages on in various circles, the actions consistent with exploring space continue. The U.S. space program is a social fact. The behavior exists despite arguments against its very pursuit based on flawed cost and benefit analyses. If the social patterns exist, it falls under the responsibility of the discipline to understand it. The ongoing forsaken nature of space remains contrary to this traditional obligation.

Ancillary Criticism: “Space is the *Final Frontier*.” This ancillary criticism is a direct extension of the central criticism and related to the ancillary criticism of space as a vacuum. Critics who use the phrase “final frontier” to downplay the significance of space tend to focus on the present without much vision about the future. Such critics attempt to characterize the exploration of the territory known as space as a nonsensical pursuit by comparing it to *Star Trek’s* “final frontier.” To them, “final” apparently means, “last,” as in something to consider in the far distant future. The title of this essay is purposely a variant of this criticism. These critics evaluate the space vision as an unrealistic fantasy. The phrase *final frontier*, when utilized by critics, actually reflects their designation of space as an unpractical “enterprise” and thus, by default, as the illegitimate substantive area reflected today as sociology’s *forsaken frontier*. Such characterizations more accurately apply to the early days of the space age than contemporary operations and potentials related to space exploration.

Such arbitrary dismissals fail to recognize the connection between a society's culture and its future direction. In this particular case, the larger cultures of industrial and post-industrial societies express the importance of space exploration partly through their science fiction literature, reflecting their basic interest in space rather than their rejection of it. Furthermore, humor notwithstanding, the *final frontier* represents an apt characterization of space when one considers the fact that humankind has fairly thoroughly explored the landmasses of the entire planet. Only the oceans and space remain unexplored. Where are humans heading if not into space and beneath the surface of the oceans? These are the final frontiers.

Viewing space seriously as the final frontier recognizes the future direction of humanity and the importance of space to that future. Discounting space exploration as a non-realistic "pie-in-the-sky" dream misinterprets the history of human societies and fails to extrapolate their futures properly. Space is indeed the "final frontier," and this should represent a positive (not a negative) characterization. That is, the *final frontier* actually exemplifies a positive characterization of the future rather than an impossible dream. Space is simply a largely unexplored territory. Indeed, the space sciences are already discovering extra-solar planets and making other monumental discoveries. Such new knowledge only makes space more inviting. And while the case for astrosociology is inexorably linked to the history of the space programs of current societies, it is the future that beckons the discipline to prepare itself for the study of astrosocial phenomena and their increasingly significant effects on other elements of social systems. The possibility of misusing space for warfare or developing spacefaring societies in the decades that follow based solely on the continued development of contemporary space programs each demonstrates the growing importance of astrosocial phenomena.

This criticism can be extremely damaging to the establishment of a new subfield such as astrosociology due to its uncritical, if not irrational, approach. Such a close-minded approach effectively eliminates the possibility of debate about establishing this new subfield with a simple dismissal. This position allows for very little compromise. To critics, the final frontier is not worth the time or effort required for sociological investigation. Sociologists should direct their efforts toward studying “realistic” social phenomena. Objectively, the final frontier, though forsaken, deserves consideration.

Conclusions Regarding the Forsaken Frontier. While only a small minority within the discipline openly criticizes the formal study of astrosocial phenomena, it is a reflection of a greater problem. Space is *sociology's* forsaken frontier due to the great level of indifference among sociologists that is likely as old as the space age. Over time, this level of indifference has grown into the contemporary manifestation of space as the forsaken frontier within the sociological community. As will be discussed next, a probable consequence of this is a reluctance of interested sociologists (including space enthusiasts) to study astrosocial phenomena due to possible criticism and feared harm to their careers. Whatever the details, a clear pattern of avoidance among sociologists clearly points to space as sociology's forsaken frontier. The absence of a subfield similar to astrosociology exemplifies this reality and requires further examination.

Rather than continuing to ignore important issues, it remains important to ask fundamental questions. Is it scientifically sound to deny the value of astrosocial phenomena before seeking to understand them? Is it wise to forsake the study of space while the space age remains in its

infancy? Perhaps worse, is it wise to ignore astrosocial phenomena even as they continue to become more relevant to both space capable and space incapable societies? While such considerations are certainly debatable, they deserve careful and deliberate contemplation rather than unexamined dismissal.

Criticisms Focusing on Astrosociology as a New Subdiscipline

The proposal to establish astrosociology as a new subfield expectedly resulted in the overt objection by some sociologists. After all, the absence of something akin to the *sociology of space* is unlikely an accidental social fact. The final four ancillary criticisms relate more directly to astrosociology and its relationship with the discipline of sociology. The central criticism still represents a vital concern because these remaining criticisms, to one extent or another, ultimately reject astrosocial phenomena as comprising a legitimate subject matter. As such, these criticisms may serve as additional excuses utilized by critics from the sociological community to reject astrosociology directly even though the impetus for this rejection probably relates most strongly to the central criticism in terms of their assessment of space as an illegitimate area of study.

Ancillary Criticism: “Astrosociology Exemplifies an Ill-Conceived Idea.” One common close-minded approach involves the simple mocking of the term *astrosociology*. Several sociologists apparently derive much enjoyment from their contemptuous characteriza-

tions! Many criticisms of astrosociology reflect a focus on this term apparently without a satisfactory understanding about its proposed focus or potential benefits to the discipline of sociology.

One prominent type of negative response focuses on the structure of the proposed term itself. *Astrosociology* is the subject of disparaging remarks in the form of “*add-your-topic-here+sociology*” such as “rhinosociology” or “basketsociology.” The major implication of this criticism is that throwing any term in front of *sociology* does not make it instantly credible. While this is indeed true, these critics tend to ignore the arguments supportive of astrosociology. At its worst, this type of criticism represents an outright rejection of astrosociology without moving beyond a narrow focus on the term. In any case, the very association of the discipline to the forsaken frontier as part of the name of the proposed subfield generates opposition.

Apparently based on nothing more than face value, a few “critics” delight in the uncritical ridicule of the term. Critics like to use science fiction references such as “beam me up” to indicate their assessment of astrosociology as unscientific. Referrals to “Tang” and “Jose Jimenez” serve as further examples. They joke about giving regards to Klingons and Vulcans. Surprisingly, there is one thing not yet communicated directly to this advocate; something like: “Give it up, it’s dead Jim.”

Several critics regard astrosociology as a passing fad in the discipline along with other connotations that suggest a short-term existence for this newly proposed subfield. They seem to regard astrosociology as a trivial “endeavor.” As a response to the general criticism that astrosociology represents nothing more than a blip on the radar screen in the history of sociological development, one can only remain true to one’s purpose, attempting to prove such predictions

as shortsighted and incorrect assessments of both the direction of societies and the direction of the discipline. Such views miss the importance of space as sociology's forsaken frontier and the significance of reclaiming it. Nevertheless, their criticisms, if nothing else, at least contribute in a small way to the propagation of this dialog until proponents can organize themselves well enough to establish the subfield.

The acceptance of *astrobiology* by NASA, and the biological and space communities, contributed strongly to the selection of *astrosociology* as an appropriate term (see Pass 2004a for its definition). Among those scientists, their term receives no ridicule. Initially, however, astrobiology faced many similar problems related to its legitimacy and relevance as a serious science. Today, in contrast, it serves to unite multiple disciplines in cooperation in order to study a given set of phenomena (i.e., extraterrestrial biological issues). Sociologists should learn from this example and adopt a similar framework for establishing astrosociology. A multidisciplinary approach with a core sociological emphasis represents a fundamental objective in defiance of the criticisms.

In the end, the term coined by Tough (1998) draws attention to a newly proposed subfield, and that makes it a good choice in spite of a few objections. The term *astrosociology* represents an apt description of the substantive area; just as appropriate as *astrobiology* for the discipline of biology. The fate of astrosociology ultimately depends upon the relevance of the substantive area it proposes to cover and the need for the discipline of sociology to recognize what it has forsaken for far too long. The name of the subfield represents a secondary matter in the larger scheme of things. With this in mind, it is appropriate to move on to more pertinent criticisms directed at *astrosociology* in terms of its relationship with the discipline.

Ancillary Criticism: “Astrosociology Represents a Pseudoscience.” Negative reactions result from the mention of “space” (especially “outer space”) partially due to the improper association by some critics between the term *astrosociology* and some or even all of the so-called “pseudosciences.” These critics argue that astrosociology must focus on the several pseudosciences that relate to space in some way including astrology as well as paranormal topics, alien detections on or near Earth, alien abductions, UFOs, crop circles, and cattle mutilations. Such assumptions are erroneous. These topics do not fall under the purview of the space sciences. Therefore, the controversies related to the perceived illegitimacy of these topics are not under review here given that such topics are not relevant to astrosociology.

Portrayal of astrosociology as covering these issues serves as an easy ploy for critics who attempt to place this proposed subfield into a negative light before a rational discussion can take place. Many unjustly view space simply as a “wacky” topic, due to their mistaken, or perhaps deliberate, association of these pseudoscientific topics with the study of astrosocial phenomena as they relate to the space sciences and space exploration. In contrast, the arguments presented in this paper remain consistent with the argument that astrosocial phenomena are strongly tied to everyday life, and increasingly so as history progresses. That is, astrosocial phenomena are nothing stranger than a particular subcategory of social phenomena and thus fall clearly under the realm of the mainstream science of sociology

Some works associated with the science fiction and horror literatures undoubtedly contribute to this perception of astrosociology as a pseudoscience. Aliens often resemble space monsters with many of them intent upon destroying humanity. Societies often resemble nuclear

wastelands or other types of dystopias. These portrayals exist along with the positive ones, of course. Overall, however, these unscientific scenarios, meant strictly for entertainment, contribute to convince some individuals that any sociological study of space issues lacks legitimacy.

Astrosociology is sociology, and as such, astrosociology is mainstream science. Contrary to the known criticisms, and undoubtedly to the various misconceptions held by many sociologists, the astrosociological approach represents conducting well-established sociological inquiry pursuant to an objective understanding of astrosocial phenomena. The core focus of contemporary astrosociology remains squarely placed upon the space programs of contemporary human societies and the ancillary social groups that support those programs, including both public and private efforts related to space. The subjects of study are human beings who work in the astrosocial sector (Pass 2004a) of factual societies; that is, people whose work and other forms of behavior somehow relates to space. It also includes analyses of pre-industrial societies and educated speculations concerning future developments. Astrosociology is *science* in the same tradition of any other sociological subdiscipline.

Thus, astrosociology is not pseudoscience in that it focuses on the everyday behavior of thousands of scientists, engineers, and bureaucrats dedicated to space in various ways. These individuals do not hunt for UFOs or question alien abductees. Rather, they work for NASA, aerospace companies, higher education organizations, and other “mainstream” social groups. Astrosociology also focuses upon the public’s connection to astrosocial phenomena as well as how this connection partly determines the future direction of a society’s space program. Additionally, space research contributes to a society’s standard of living in a myriad of diverse

ways and inspires the public. Therefore, astrosocial phenomena affect the everyday lives of normal people. As the study of astrosocial phenomena, astrosociology thereby possesses a strong connection to mainstream science. It does not focus on the “abnormal” forms of behavior characteristic of the foci of the pseudosciences.

Ancillary Criticism: “Astrosociology Contributes to the Fragmentation of the Discipline.” This criticism is a legitimate one as the proliferation of newly emerging subdisciplines represents a potential source of harm to sociology’s future. Dilution of the discipline and the related diversion of attention from critical issues remains an ongoing concern. One question directly addresses this apprehension. With the growing number of proposed specialties and subfields, is astrosociology harmful to the discipline? Predictably, the affirmative answer to this question represents the ongoing assumption, as evidenced by its absence through the course of the space age.

In contrast, the argument put forth here favors change in the sociological subculture for *beneficial* reasons. The proposed subfield of astrosociology fills a void in the discipline of sociology due to its very focus upon *astrosocial phenomena*. While the absence of astrosociology does not rule out the discussion of astrosocial phenomena in the general sociological literature, each article, book, or paper remains isolated as an independent body of work rather than as part of a single literature unified under a single banner. A related benefit of this subfield relates to its ability to unite unconnected sociological issues together under a commonly recognized substantive area. Thus, astrosociology potentially pulls together disparate topics that otherwise potentially become lost or remain isolated, and thus lose their level of significance.

Many oppose the establishment of astrosociology based on the argument that existing subfields, such as the sociology of organizations as well as the sociology of science and technology, continue to cover the pertinent issues without consequence. To counter this view in another way, consider a few of the important areas of concentration (forms of astrosocial phenomena) proposed as falling within the mainstream purview of astrosociology:

(1) analysis of organizations within the astrosocial sector; (2) space policy; (3) space law; (4) international cooperation/conflict in space; (5) possibility of a spacefaring future and its characteristics; (6) non-astrosocial cultural influences on human activities in space; (7) cultural influences of astrosocial phenomena on society (including religious groups and those within other institutions); (8) impact of space sciences and technologies on society (including contributions to solving social problems and “spinoffs”); (9) space advocacy and education; (10) media coverage of space issues and documentaries; (11) space tourism; (12) the roles of the state and private enterprise in space; (13) the influence of the military in space; and (14) practical/public astrosociology (e.g., sociologists involved in the planning of space communities, program evaluations and other “hands-on” efforts). (adapted from Pass 2004b)

As things now stand, how many subfields are required to cover all of these areas of sociological inquiry? Is this situation truly manageable? It seems that such is not the case. The status quo actually personifies unneeded fragmentation. The current circumstances encourage forsaking astrosociological issues rather than adequately addressing them, yet its adoption actually results in less fragmentation while increasing the focus upon astrosociological issues.

By bringing together unorganized areas of concentration currently considered separately, with space serving as the underlying theme, astrosociology possesses the promise of allowing a single literature to develop. This new organized approach potentially provides for a greater chance to move forward at a reasonable pace. Sociologists specializing in Marxism, criminology, and all other subfields enjoy this same advantage. Unquestionably, outstanding sociological

works related to space *do* exist, though this is not the point. The problem lies in their disorganization within the existing structure of the discipline.

Disorganization has a major consequence. Overall, the study of astrosocial phenomena remains underwhelming. Only a new subfield dedicated to this area of social life can generate interest, not to mention a level of legitimacy that is clearly absent. The study of human behavior related to space continues to attract ridicule even though thousands of human beings work in occupations and advocacy groups related to space, and have been doing so for decades. How have the various social forces related to the space age affected society? How much do we really know? Respectively, the simple answers to these questions are “tremendously,” and “not much”! Two important further questions arise from these considerations. Why does sociology ignore such issues? What it will take to change these circumstances?

Unquestionably, a valid concern exists about the establishment of any new subdiscipline due to its potential contribution to the proliferation of unneeded subfields and specialties. Nevertheless, proposals with merit that demonstrate a need for establishment must not succumb to unexamined rejection. The sociological community will ultimately decide on the intrinsic worth and necessity of astrosociology. Whether or not astrosociology establishes itself as a new subfield, it deserves a fair hearing and serious consideration, without the unwarranted contempt already evident in some circles. If any subfield deserves serious consideration as we move further into the “final frontier,” a subfield that directly studies this unexplored territory seems like the perfect candidate. Ultimately, sociology benefits from a new level of organization in a discipline that currently provides a disorganized, as well as inadequate, treatment of astrosocial

phenomena. In conclusion, then, the fragmentation criticism completely misinterprets the effects of establishing astrosociology and therefore its value to the discipline.

Ancillary Criticism: “This is a Case of ‘Putting the Cart Before the Horse.’” An observation by some that deserves attention relates to the old cliché that the call for the establishment of a new subfield before the literature is established is akin to putting “the cart before the horse.” In this analogy, the sociological literature represents the horse and astrosociology is the cart. This argument states that a subfield properly establishes itself only after the proliferation of writings in the newly forming area dictate a practical necessity for it. That is, the existence of a large body of literature focused upon a particular substantive area should drive the creation of a new subfield dedicated to that particular area, and not the other way around.

The history of the establishment of sociological subfields serves as a general guide for how things may establish themselves. The development of criminology is a good example of the horse pulling the cart. That is, the literature continued to build within the general discipline as individual article submissions received approval for publication in mainstream journals until reaching an appropriate threshold. At the point, the subfield had developed a large following and thus a general level of acceptance.

The problem with this comparison is traceable to the contemporary structure of the sociological discipline. Arguably, its structure remains much more established and thus more rigid today, and consequently less open to major changes. At an earlier point, in contrast, criminology provided not only an obvious substantive area to rally around but also greater prestige for individuals and an evolving discipline. The development of astrosociology in the

current climate requires a **bold move** to shake things up. The establishment of this proposed subfield requires a declaration of its existence followed by a fair debate within the sociological community as to whether or not it is constructive and helpful.

Currently, one faces an absence of important literature related to astrosocial phenomena, despite the fact that human interactions comprising this substantive area continue to make important contributions to society even while attracting very few sociological investigations. Using the current analogy, what does one do when the horse refuses to pull the cart? Due to inattention, perhaps the horse starved to death before it could pull the cart! So, where does the fault lie? Is the problem rooted in an unreasonable rejection within the discipline? Alternatively, is the study of astrosocial phenomena truly inappropriate for sociological inquiry?

One reason for this reality, favored by the critics, is that space-related human behavior is meaningless from a sociological perspective (reflecting the central criticism). The more reasonable view, favored here, is that space represents a *forsaken* frontier and thus astrosocial issues are indeed important despite the absence of a significant amount of dedicated literature. If this is the case, it is a perfectly logical approach to defy convention and “put the cart before the horse.” Otherwise, there is every reason to believe that the future will reflect a continuing trend of astrosociological issues receiving only spotty attention and allowing for very little progress. Trends such as this are not helpful to the discipline because they virtually ignore social patterns that persist over time despite the lack of sociological investigation (and imagination) applied to them.

In fact, as we venture more aggressively into space in the future, the discipline of sociology should better position itself so that it is already receptive to the increasing integration

of space-based social patterns and ideas into societies' institutions and social groups (Pass 2004b). Trends in this direction already exist, as stated earlier, especially now that the President has declared a more coherent overriding policy and *SpaceShipOne*⁶ has captured the \$10 million dollar *Ansari X Prize*⁷ ushering in the era of private space enterprise. And now, *Virgin Galactic*,⁸ which has licensed the *Scaled Composites*⁹ technology, represents the first foray into the private space tourism industry even while U.S. regulators struggle to establish “friendly” safety regulations for civilian organizations. How long can sociology continue to ignore astrosocial phenomena in the midst of such social and cultural change?

The absence of a coherent astrosociological literature signifies a state of affairs that serves to continue the “forsaken frontier” mindset among sociologists. The “space age” is nearly fifty years old and yet the creation of something such as “the sociology of space” remains unfulfilled (Pass 2004b). Either the sociological study of space-related behavior is truly unimportant or the discipline has forsaken space without regard as to its significance to human societies. Even on a simple level, studying the effects of the spinoffs of NASA’s research and the possibility of privatized space operations makes astrosociology worthy of serious consideration.

With these considerations in mind, the prudent move is to “put the cart in front of the horse” and drag both of them into the twenty-first century by defiantly declaring the establishment of astrosociology as a new subdiscipline. Any forsaken frontier with merit deserves attention, especially when a discipline can contribute much to its understanding even though continues to ignore it. The absence of a coherent dedicated literature is no reflection on the importance of this substantive area. Therefore, rational approach is to recognize its importance

along with the failure to address it, and formalize an approach dedicated to rectifying the problem. The past presents us with a history of failure to recognize astrosocial phenomena as important issues worthy of sociological inquiry. It is unwise to continue along with this failed course of inaction while the space age rages on and astrosocial phenomena become increasingly relevant to societies as well as to sociology.

Conclusions Regarding the Forsaken Subfield. Much of the resistance to the establishment of *astrosociology* is likely traceable to the central criticism questioning the very legitimacy of studying astrosocial phenomena. For critics, to one extent or another, space itself represents a forsaken frontier unworthy of sociological inquiry. Through the years, any proposed subfield serving to address astrosocial phenomena historically received unconsidered resistance due to this central concern. Therefore, while criticisms of the establishment of a subfield such as astrosociology do possess some merit on their own accord, they remain fundamentally tied to questions of legitimacy of the substantive area. This exercise represents an exploratory identification of major known criticisms along with arguments favorable to proceeding without outright dismissal of establishing astrosociology as a new subfield. The treatment of space as a forsaken frontier lacks logic and foresight. Those interested in the study of astrosocial phenomena deserve the right to pursue this area of sociological inquiry without discrimination. In the future, things will only become more complex and, if the current trend continues, sociology will have fallen further behind the other social sciences.

Future Trends: Reclaiming Forsaken Territory

It does not take a “rocket scientist” to understand the problem presented in this essay (although, apparently, it does not hurt). Rocket scientists at least seem to realize that their work is important. Collectively, sociologists continue to overlook the growing relevance of space for advancing societies and many openly criticize any organized effort to study it. Sociology is not rocket science, but sociologists should be interested in social patterns related to rocket science. They are, after all, astrosocial phenomena.

It is too early to determine the exact magnitude of the indifference/resistance. However, it is a fact that sociology consistently ignores space unless perhaps, and unfortunately, a tragedy occurs. This reality certainly seems to reflect an overall set of values within the sociological subculture that serves to diminish the importance of astrosocial phenomena. Space is, in fact, a forsaken frontier, and thus its current illegitimate character is unlikely accidental.

Based on the foregoing rebuttals to known criticisms, it should be apparent that sociological inquiry in this area of social life represents an important undertaking despite the unconvincing resistance and a lack of serious treatment. As a contrast to the citizens of space capable societies, sociologists currently devalue space exploration, at least through their inattention. **This stark contrast should serve as a warning bell!** It seems logical that sociologists should study all social patterns just because they exist, including those related to astrosocial phenomena.

Reclaiming the forsaken frontier necessitates the recognition that space is indeed a legitimate

territory and the willingness to apply the sociological perspective to human behavior associated with it.

Ultimately, human beings and their diverse social groups will move further into space for cultural as well as practical reasons. The opposite pattern, while possible, represents an insufficient reason to dismiss astrosociology. A spacefaring future is a legitimate possibility. We are more likely to move into space than retreat back into caves. Cultures favor the pursuit of science and technology, even with its inherent problems, and space science research contributes to societies in a many ways. The arguments against astrosociology seem dated when one considers that our expansion into space has long since begun. Current measures such as the number of human beings in space are irrelevant to the long-term trend. That is, the current pace of progress in space is less important than the great probability of making progress in space.

Sociologists *should* view astrosocial phenomena as comprising an important dimension of social life worthy of study simply because they exist. It is as if the discipline ignored deviance in the midst of a crime wave. The organized study of astrosocial phenomena has not occurred, and the “space wave” continues. Sociology largely rejected a strong commitment to study the space program; or worse, decided it was unimportant. In making the bold statement that astrosociology is a new subfield, the debate concerning its establishment begins 47 years too late; but it begins nevertheless.

Will reclamation of the forsaken frontier result in the destruction of our discipline, as some claim? If astrosociology actually becomes a mainstream approach within the discipline, many fear that this is potentially the last nail on the coffin, signaling the impending doom of sociology. Is this one fragment too many? Let us hope that these circumstances do no exist, for

if that is the case, then sociology will disappear into the annals of history with or without the help of astrosociology! This outcome seems extremely unlikely, so we must address the forsaken nature of space as a frontier (i.e., a territory comprising infinite social settings) presented by the proposal of astrosociology in the context of sociology's history. Any frontier in which social interactions take place is a legitimate frontier; and thus, any astrosocial phenomena within it deserves serious attention from the sociological discipline.

At this early juncture in the formulation of an astrosociological approach, it appears that indifference characterizes the sociological community's relationship to the forsaken frontier of space. The greatest response to the proposal to establish the subfield of astrosociology is silence. Future research must address the character of this indifference to gain a better understanding of why a subfield such as astrosociology was not established long ago. On a simple level, one may hypothesize that sociologists simply believe space is boring, even "wacky" as an area of study, or simply unimportant. Based on the high interest level of the public as well as cultural considerations that favor space exploration, it is doubtful that even the greatest number of indifferent sociologists considers space as boring or unimportant.

Thus, there is reason to suspect that many of the indifferent sociologists simply do not see the study of astrosocial phenomena as a viable opportunity due to its historical forsaken character. Why pursue the study of astrosocial phenomena if it jeopardizes one's career in the process? Even many potential advocates dare take only careful overt actions consistent with their advocacy. By making space an acceptable and thereby accessible territory, all sociologists will find a new freedom to become astrosociologists without the fear of ridicule and harm to their careers.

The case for astrosociology boils down to two major considerations: (1) the legitimacy of the proposed substantive area and (2) the need to establish a new subfield in order to investigate it properly. The foregoing arguments represent a set of reasons why astrosociology, as proposed, covers an important forsaken substantive “territory” and thus one worthy of proper sociological inquiry. It remains for the sociological community to decide whether to continue the current approach characterized by ignorance or address astrosocial issues in the same way that any other areas of social life receive attention. This brings us to a final question. What is necessary for sociology to take astrosocial phenomena seriously? Perhaps a great threat to humanity must present itself before sociologists take astrosocial phenomena seriously! Candidates include “killer” asteroids, global warming, overpopulation, depleted energy sources, contaminated soil or water, and generally dwindling resources. (Does this seem familiar?) It seems overdue already, though a potential tragedy should not be necessary to prompt the serious study of astrosociological issues, especially when greater insights about how the space program may contribute to solving social problems increase in likelihood when scientists pay attention to such matters.

The characterization of the sociological community in terms of its relationship to space as the forsaken frontier represents an extremely early attempt to account for this pattern of avoidance regarding the study of astrosocial phenomena. Further research is required to test the veracity of the preliminary insights presented herein, both in terms of the identification of the criticisms and the responses to them. Again, one must consider the fact that the number of known supporters currently surpasses the number of known critics. Thus, when considering the forsaken nature of space, most of those opposing the study of astrosocial phenomena remain

hidden from scrutiny. Sociology continues to ignore astrosocial phenomena, so a significant level of resistance probably exists along with an even higher level of indifference.

This reality requires understanding on an objective basis. A survey of the sociological community is necessary to understand the reasons for sociology's avoidance of studying social space with connections beyond the Earth. Within the discipline, one must also consider a comparison between those in powerful positions with those possessing less power. Where does the resistance lie? A survey is the only method capable of probing the entire sociological community and making an objective assessment of the current problem related to space as sociology's forsaken frontier.

Finally, a bold prediction: the sociological study of the social patterns related to space (e.g., astrosocial phenomena) will gain legitimacy as its traditionally forsaken nature in our discipline finally becomes well recognized and addressed. In the end, adopting astrosociology because it covers a relevant substantive area long ignored makes the discipline of sociology more relevant as well. Reclamation of this territory consequently serves as reclamation, or renewal, of sociology itself based on the simple acknowledgment of a mistake in which an important dimension of social life remains forsaken for going on fifty years. (However, this observation does not even address issues related to astrosocial phenomena before the advent of the space age – this fact makes the avoidance of astrosocial phenomena even the more remarkable).

Notes

01. Presentation of this paper occurred on October 16, 2004 at the California Sociological Association (CSA) conference in Riverside, CA; posted first at *Astrosociology.com*.
02. Many critical comments resulted directly from sending an email message to every ASA member possessing a valid email address in the ASA online directory as part of an ongoing effort to create a new astrosociology section. Some criticisms directly went to *Astrosociology.com* as email messages while others exist in blogs found on the web. One may locate negative blog comments by utilizing an internet search engine and looking for “astrosociology.”
03. The overt supporters represent those contacting *Astrosociology.com* to express their positive comments related to its efforts. An interesting identifiable pattern reflects a larger number of astronomers and other types of social scientists making such contact with the site.
04. This figure of 434 humans reaching suborbital flight comes from an article on the *Space.com* website covering the winning flight for the *Ansari X Prize*. The link is as follows: http://www.space.com/missionlaunches/xprize2_success_041004.html.
05. President George W. Bush’s *Renewed Spirit of Discovery* space policy may be viewed at the White House website cited below.
06. Information about *SpaceShipOne* is available at the *Scaled Composites* website. See reference below.
07. Information about the *Ansari X Prize* is available at the X Prize Foundation’s website cited below.
08. Information about *Virgin Galactic* is available at their website cited below.
09. See note 4 (Scaled Composite built *SpaceShipOne*).

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