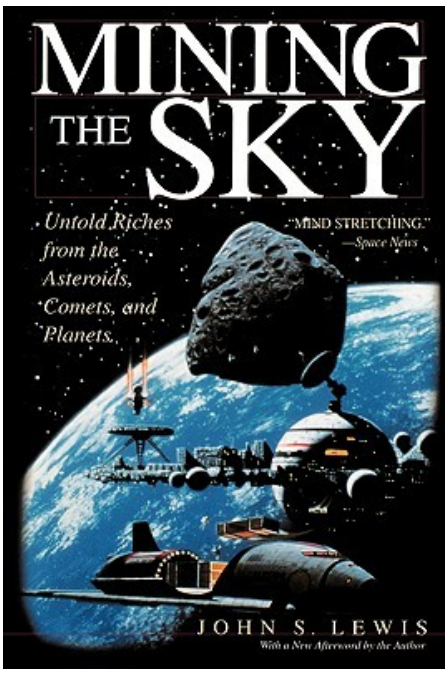

Mining the Sky: Untold Riches From The Asteroids, Comets, And Planets

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While we worry over the depletion of the earth's natural resources, the pollution of our planet, and the challenges presented by the earth's growing population, billions of dollars worth of metals, fuels, and life-sustaining substances await us in nearby space. In this visionary book, noted planetary scientist John S. Lewis explains how we can mine these precious metals from the asteroids, comets, and planets in our own solar system for use in space construction projects. And this is just one of the possibilities. Join John S. Lewis as he contemplates milking the moons of Mars for water and hollowing out asteroids for space-bound homesteaders—all while demonstrating the economic and technical feasibility of plans that were once considered pure fiction.

Mining the Sky: Untold Riches From The Asteroids, Comets, And Planets Details

Date	:	Published September 23rd 1997 by Basic Books (first published 1996)
ISBN	:	9780201328196
Author	:	John S. Lewis
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From Reader Review Mining the Sky: Untold Riches From The Asteroids, Comets, And Planets for online ebook

Gf says

What begins with an outdated feel (this book is already 20 years old) ends in an incredibly optimistic and logical vision for the future. I urge the reader to power through the technical jargon of the first few chapters, the reason behind the 4/5 star rating I am giving it, in order to access the vision of John S. Lewis, and challenge him or her not to be disturbed by the apparent facility of moving to outer space.

With the hindsight provided by 20 years of posterity, clearly some of John S. Lewis' ideas were pure speculation and futurist optimism, and yet in the final chapters one can see how clairvoyant he was about the state of our civilization in the early 21st century, accurately describing smartphones, the internet and other micro-computers. The disappointing realization that in these 20 years, our technology has greatly improved in the field of communication and not in the field of transportation builds up to the last chapter.

I am torn between outrage and dismissal. Outrage because if what Mr. Lewis says is true, we are kept from these adventures by partisan politics and risk-allergic businessmen. Dismissal because if what Mr. Lewis says is true, why wouldn't any clear thinking millionaire have started mining asteroids already ? Clearly technology has not accelerated as much as he foresaw, and the likes of Blue Origins and SpaceX are still focusing on the space tourism market.

I think we'll get there. I hope we'll get there.

Pete says

Mining the Sky: Untold Riches from Asteroids, Comets and Planets (1996) by John S Lewis is an interesting but quite heavy going look at the resources available in the solar system that could be extraced. Lewis is Professor Emeritus at the University of Arizona's Lunar and Planetary Laboratory.

The book systematically looks at the resources available in the moon, asteroids and on other planets and points out that the potential is staggering, enough minerals, metals and energy to provide all the resources for a much larger population of humans and for exploration of other solar systems.

The book isn't an an easy read because it tends to barrage the reader with the details of the chemical composition of the planetary bodies but it is definitely a worthwhile read for anyone interested in how space exploration could be economically viable.

David Seymour says

I found this book very enjoyable to read and opened up many new possible ideas for space that I hadn't thought about before.

James says

Very good. This book is a companion to the same author's book Rain of Iron and Ice, which is about the history and threat of comet and asteroid impacts on Earth, and both books were published in 1996. Although that would seem to make this dated, as with the other book it actually boosts Dr. Lewis' credibility, because events since then have pretty much borne out his expectations regarding the makeup of the rest of our solar system.

Mining the Sky is the positive or "heads" side of the same metaphorical coin for which Rain of Iron and Ice is the tails side. Both relate to the huge number and variety of kinds of other bodies orbiting the Sun in roughly our neighborhood - say from the orbit of Jupiter inward. But whereas Rain of Iron and Ice is about the threat some of them pose through the risk of their colliding with Earth, Mining the Sky is about how we can put them to good use instead - to move polluting industries into space; to replace resources we're running out of, especially sources of energy; and to provide enough other places to live that whenever the next dinosaur-killer-sized rock does wallop Earth, we as a species won't still have all our eggs in that one basket.

This book is a bit wonkier than the other one - more math and formulae - but to get the ideas, the reader can breeze through those parts and take in the possibilities they offer.

I want our grandchildren (now 8 and 10) to have careers in space as a realistic option if they want them fifteen years from now. Don't know whether it's going to happen, but if it does it will be thanks to thinks like this author.

Charlie George says

Very engaging summary of asteroids and their extraordinary utility to any space endeavour. Not to mention some motivating factors to get us to that point, such as the threat of annihiliation by a Near Earth Asteroid or comet and large-scale solar power satellites as a future energy source. Lewis does come across as a dyed-in-the-wool, market-will-solve-everything capitalist, but I'm willing to forgive him that in light of his singularly insightful and well-presented argument for "mining the sky".

One of many interesting gems: the asteroid belt alone contains raw metals worth at current market value 500 billion-billion dollars, i.e. $100 billion for each person on earth when the book was written.

Bradley Mazurek says

As someone that is both an optimist and ponders potential futures of humanity, this book provides great insight into the the potential right in our backyard (cosmically speaking). I loved the way it unleashed my imagination into what is possible for our species if we can get our act together.

Steve Van Slyke says

The most interesting thing for me was his compelling argument that NEO's (asteroids and expired comets in orbits that cross Earth's) are much more attractive for resource extraction than the moon. First, the valuable materials--metals and water--are more highly concentrated in the NEO's and second they are less expensive to travel to and from because of their significantly lower gravity than the moon. (Could it be that Obama's space advisers were influenced by Lewis in their decision to promote a human mission to a NEO over a return to the moon?)

I think he let his enthusiasm for space exploration and colonization get the better of him at times such as when he makes rather extreme estimates of population growth and the resulting inevitability of human missions to NEO's and Mars in the near term.

Still, I found it interesting to the point that I would definitely acquire a revised edition if he were to publish one, and I may re-read this edtion some day if he doesn't.

Samuel says

I loved this book, it offers an optimistic future that I hope humanity can one day achieve. If we can keep from destroying ourselves I think it is inevitable that we will explore the universe.

Clay Davis says

I liked the idea of a gold rush to space.

Orgon Solo says

Mining th Sky is a fascinating geological survey of outer space. How much gold nd diamonds can we expect to dig out of the asteriod belt, how could we most efficiently build moon settlements, or wether it is neccesary. The book thinks asteroids are more viable economically than the planets. ts a decent enough read if you are interested in outer space buisness for sure, and the world could need more like this. What drags it down a little is that the author interjects the chapters with his own parallel sci fi story which just disturbs the flow of the book. Also some factual errors on electricity and comets . But that is to be expected for a book written in the nineties

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Hong says

- Disorganized. Last two chapters are disconnected from the rest of the book.

- The depth disappoints me. Instead of discussing the barriers of Solar Power Satellites (SPS) and possible technological advancements that can possibly overcome them, the author focuses on how useful SPS can be

to humankind. Issues of reducing space launching cost and possibility of near-future propelling systems, which are critical, are ignored. Power generations are assumed to be trivial without a detailed discussion. Economic calculations are annoyingly rough or sometimes left blank (e.g., in the discussion of producing CFCs in Mars terraforming). Development of self-replicating machines, another critical technology, is ignored. Estimations on economy and population are naïve or even ridiculous.

- History of lunar missions, ancient Chinese sea explorations and classification of asteroids are things that I don’t care.

- The good things: learn a number of things especially on the chemistry of space objects. It is entertaining to see how the author approach an unthinkable question of mining the sky based on his knowledge. The author knows his stuffs well. This book is written from a perspective based on his expertise.

- Over-optimistic. Whenever mining He3 for fusion is discussed, I want to skip.

Jonathan Jeckell says

This should have been an easy five stars for me, as enthusiastic as I am about the topic and how well he made the argument throughout most of the book (which troubles me about the objectiveness of my other reviews). 90+% of the book is fantastic, clear, and insightful. But the first sign of trouble was the vignette at the beginning of Chapter 14 where he portrayed average people in a harsh, unnecessary, and harmful way to his argument. Then he does it again a few chapters later strongly implying that just about everyone else are willfully ignorant and illiterate morons. Chapter 14 launched into a series of strawman arguments against broad swaths of the political spectrum giving them the same treatment. This is not how you persuade taxpayers to support your ideas. I would love to give this book to other people, but I would use a razor blade to extract chapter 14 if I did. Without that, it paints a vivid picture and a coherent, feasible plan of how and WHY we can sustainably and profitably expand into space and make Earth a better, more livable place at the same time. This book ought to be inspecting space entrepreneurs, politicians, scientists, engineers, and yes, environmentalists everywhere.

Robert Garcia says

A very odd mix of science, fiction, and political discussion that is difficult at times to complete. The author should have stuck with the science where he seems more comfortable.

Keith says

dnf

I tried I really did. I love the ideas being discussed and the science ... but then I learned that the author is a climate-change denialist (as a result of his conversion to Mormonism), and while this shouldn't affect the physics of the science he's writing about ... it just caused me to fall out of interest in his writing and ideas.

edited to add ... I would love to be shown to be wrong about Dr. Lewis. And maybe denialist is not the right word .. skeptic may be better.

The Fat Astronaut says

John S. Lewis is a professor of planetary science at the University of Arizona. His expertise on the composition and chemistry of asteroids and comets really shines through in this book. The premise of the book is to explore the possibilities of a self sufficient space program. Lewis argues that with initial investment in some properly planned space missions, in contrast to the flags and footprints missions of the Apollo program, a reasonably profitable space economy can be set up. He explores the economic and technological possibilities of having a permanent base of operations on the moon beaming solar power in the form of microwaves back to the Earth. He proposes that for this to be economically feasible the majority of propellants and photovoltaic cells be manufactured using processed materials from the moons regolith. The major obstacle that this plan runs into is the lack of hydrogen on the moon; hydrogen is essential to the manufacture of water and propellants. If space missions are to be economically feasible, the book proposes that we mine near earth asteroids (NEO's). Over half the NEO's are dead comet nuclei, rich in water and other volatiles. The remaining half are rich in metals. With these resources solar cells can be manufactured and placed in geocentric earth orbit, beaming cheap solar power 24/7 to Terra. He then outlines several possibilities of how the space industry can export materials and power to the resource limited earth such as helium-3 from the moon and the atmospheres of giant planets. He argues that humanity's expansion into space, forced by overpopulation and dwindling resources, is inevitable. This book was a pure joy to read. It is well thought out and written, each chapter begins with a brief story like narrative taking place in the future, showing us various possibilities and exiting our imagination.
