SNAKE RIVER SKIES

A PUBLICATION OF THE
MAGIC VALLEY ASTRONOMICAL SOCIETY

February 2009 Monthly Newsletter

Mighty Orion: The Mythology

The most brilliant of all the constellations dominates our evening sky this week, climbing well up in the south around 9 p.m. local time. It is, of course, Orion, the Hunter. But just exactly who was he?

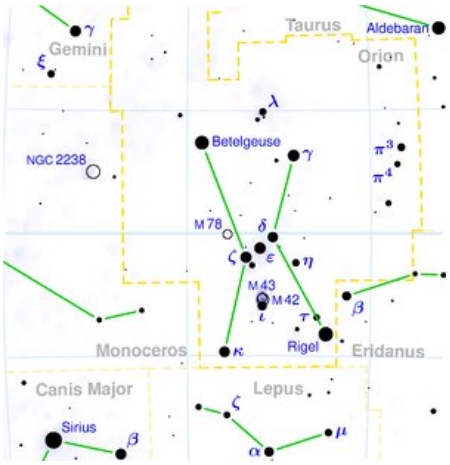
As is also the case with the mighty Hercules, the figure of Orion has been associated in virtually all-ancient cultures with great national heroes, warriors, or demigods. Yet, in contrast to Hercules, who was credited with a detailed series of exploits, Orion seems to us a vague and shadowy figure. The ancient mythological stories of Orion are so many and so confused that it is almost impossible to choose among all of them. Even the origin of the name Orion is obscure, though some scholars have suggested a connection with the Greek "Arion," meaning simply warrior. All, however, agree that he was the mightiest hunter in the world and he is always pictured in the stars with his club upraised in his right hand.

Hanging from his upraised left hand is the skin of a great lion he has killed and which he is brandishing in the face of Taurus, the Bull, who is charging down upon him.

Where stars are born

Below Orion's famous three-star belt is undoubtedly one of the most wonderfully beautiful objects in the sky: the Great Orion Nebula. It appears to surround the middle star of a fainter trio of stars in a line that marks the hunter's sword. The nebula is invisible to the unaided eye, though the star itself appears a bit fuzzy. It is resolved in good binoculars and small telescopes as a bright gray-green mist enveloping the star. In larger telescopes it appears as a great glowing irregular cloud. A sort of auroral glow is induced in this nebula by fluorescence from the strong ultraviolet radiation of four hot stars entangled within it. Edward Emerson Barnard (1857-1923), for many years an astronomer at Yerkes Observatory, once remarked that it reminded him of a great ghostly bat and that he always experienced a feeling of surprise when he saw it.

The Great Orion Nebula is a vast cloud of extremely tenuous glowing gas and dust, approximately 1,600 light-years away and about 30 light years across (or more than 20,000 times the diameter of the entire solar system). Astrophysicists now believe that this nebulous stuff is a stellar incubator; the primeval chaos from which star formation is presently underway.



In living color

One of the pleasures of stargazing is noticing and enjoying the various colors that stars display in dark skies. These hues offer direct visual evidence of how stellar temperatures vary.

In Orion, ruddy Betelgeuse and bluish Rigel provide an excellent color contrast but we can easily find other colors as well. Look at orangish Aldebaran and yellowish Pollux. And considerably removed from the winter groupings, is brilliant topaz Arcturus, usually regarded as a spring star, but now, in the dead of midwinter, rises this week between 10:30 and 11 p.m. and quickly holds forth in solitary splendor in the east-northeast.

Even as you observe these stellar colors, do you notice that they're recognizable only for the brightest stars? This is due to the physiology of the eye, more specifically, the fact that the color sensors on the retina – the cones – are insensitive to faint light. Under dim illumination the retinal rods take over. But their greater light sensitivity is offset by their color blindness. This is why we see all faint stars as white However, if we look at them through binoculars or a telescope, their amplified brightness stimulates the cones, which can detect their color.

Joe Rao serves as an instructor and guest lecturer at New York's Hayden Planetarium. He writes about astronomy for The New York Times and other publications, and he is also an on-camera meteorologist for News 12 Westchester, New York.

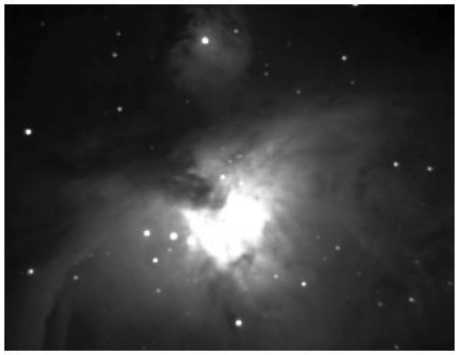
A Preacher's Thought's

Editor's Note on this article: *As we celebrate the 400th Anniversary of Galileo Galilei, who looked to the "Heavens;" we should be reminded that "Faith" is a personal matter. Galileo literally was accused of heresy by the Catholic Church. As many of you may be aware, the Vatican has its own observatory: "The Vatican Observatory," which is one of the oldest astronomical research institutions in the world. Read this article from society member Pastor Jim Tubbs as he relates his own personal reflections on the cosmos. There is no intent for any argument only a view point to be shared.*

Many months ago, I was asked by one of our society members "How does a preacher even get interested in astronomy?" It was an honest question of genuine curiosity, but I did not give an answer at the time. Frankly I was a bit stunned. How could a preacher not be interested in astronomy? A line in one of ancient Israel's hymns of praise says "*The heavens declare the glory of God, and the sky proclaims the work of His hands.*" Since that question, I have been thinking how I would answer. I spoke with V.P. David Olsen and told him I thought it would be fun to write an article for our newsletter that would answer that question without being preachy (hopefully). The article was supposed to be ready for the December newsletter, but due to a busy month, I was unable to get it ready (read this as, I put it on the back burner and then forgot about it). And that was just as well, for that gave me time to reconsider my original plan.

What I propose to do is set forth the very basic assumptions which lead any person to particular conclusions. Our views of this world are determined by what we consider to be valid sources of knowledge. It is of no value to argue pros and cons of immediate creation by divine fiat or long creation by scientific process, or to set forth alternative explanations of troublesome facts if the parties involved do not share a common regard to different sources of knowledge. Setting aside for the moment the issue of faith, there are two sources of knowledge – Science and History, and the process of obtaining knowledge through these disciplines is as different as night and day.

Webster's gives the definition of science as "1. A branch of knowledge or study dealing with a body of facts or truths systematically arranged and showing the operation of general laws 2. Systematic knowledge of the physical or material world." Likewise, history is defined as "1. The branch of knowledge dealing with past events.....4. The record of past events, especially in connection with the human race."



The acquisition of knowledge is its method. The scientific method is "a method of research in which a problem is identified, relevant data are gathered, a hypothesis is formulated from this data, and the hypothesis is empirically tested" (again, Webster's). This is the method of choice in our modern age. By this our knowledge of this physical world and the universe has advanced impressively. As recent as my birth (1956), it was believed our galaxy was the sum total of the universe. Our ability to measure distance is constantly being refined. Using creative techniques and new types of telescopes we are able to see objects behind other objects. And just this past year we have obtained our first visual image of a planet orbiting another star. Outside of astronomy, the physical life we live is the result of science – from the clothes we wear, the food we eat, the homes in which we live, the cities that we build, the cars that we drive, the computer this article is typed on – all these exist because of science.

The historical method requires the gathering of sources and developing a confidence in the accuracy of those sources. Unlike the scientific method, which should yield results that can be repeated and verified by others, historical sources are often spotty, not providing the level of detail our western scientific mind craves. Multiple conflicting sources must be weighed, with judgments made concerning their value. Even with sources that are regarded as having a high degree of accuracy, we find ourselves wanting greater exactness. As an example, in studying the history of ancient Egypt, I was struck by the varying dates given the dynasties and events of Egypt. In many cases, all we have are names...nothing else. To make matters worse, the Egyptians tended to memorialize only those things which tended to elevate them. Trying to fit in other current events of the surrounding nations is difficult because of all the gaps. The modern mind is not comfortable with these deficiencies. However, this is the nature of knowledge for most of mankind's existence, and therefore cannot be ignored. One might wonder why we even need to concern ourselves with historical knowledge, given its deficiencies. Scientific knowledge can tell us much about what we are, but it takes historical knowledge to inform us who and why we are. Among other benefits, historical knowledge provides the framework of wisdom to guide our steps in a scientific world where virtually anything is possible.

There is one other term which must be defined, if for no other reason than that it is often misused. That word is faith.

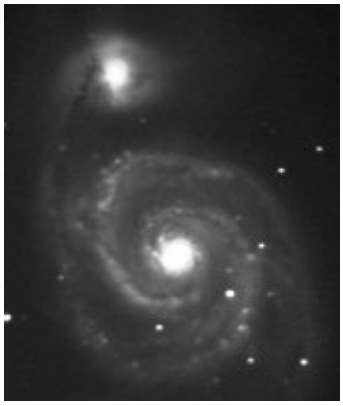
It has been misused not only by skeptics, but by believers as well. It has been given meanings and actions that should have never been applied. Christians often present their faith as something believed despite, and contrary to, all evidence.

Skeptics present such faith as the wishful thinking of superstitious or uneducated people. Webster's gives these definitions as the first two: 1. *Confidence or trust in a person or thing.* 2. *Belief which is not based on proof.* The second definition is the one most often connected with religion, and often justifiably so. The first definition is universally accepted and attested. It is exercised in our lives every day. We would be unable to function as human beings without the exercise of faith.

I submit that faith in a living, creating God is eminently reasonable, because it is confidence and trust based upon genuine knowledge. It is neither the scope or the place of this article to present a comparison of the historical claims made in Scriptures, as opposed to other religion. I will have to content myself with simply pointing out that the contents of the Bible are a collection of ancient documents, written over a span of 1,500 years, with many different authors that function as primary historical sources and demonstrated to hold to a high degree of accuracy. Those documents do have a religious agenda, but that does not invalidate them as faithful accounts of historical fact. Even modern histories are written with an agenda and bias, yet no one disqualifies those accounts on that basis only.

This brings me back to what I have previous written. As we seek knowledge, we have two fundamental sources – scientific inquiry and history. As we gain the knowledge of scientific inquiry, we gain knowledge on the mechanism of this creation, whether we study astronomy, geology, biology, chemistry, or any other scientific discipline. As we gain knowledge of historical inquiry, we gain knowledge of events and movements of humanity. The problem arises when we elevate one branch above the other. Five hundred years ago, western Christianity behaved as though its tradition was superior to any other knowledge. Four hundred years ago, Galileo dared to posit the notion that the earth orbited the sun. As a result, he incurred the condemnation of the Church. Still, the Age of Enlightenment was born, men rightfully questioned the tyrannical behavior of the Church, and the scientific age came into fruition.

Now we face the same situation as 400 years ago. Scientific methodology has become so pervasive, that men have elevated it to a position it does not deserve. Unless a proposition can be scientifically proved, it is not considered valid. Belief in God is irrational, because science cannot prove God's existence. Belief in creation is irrational, because science cannot probe a time when there was nothing. In short, men have installed science as the protector of current orthodoxy and dissenting voices are mocked.



I have an insatiable curiosity for this universe in which we live. But I have chosen that my world view is to be informed by all that is good and true. I have no doubt that much of what we are learning about the cosmos is more or less accurate. Just in the course of my life we have progressed from believing the Milky Way Galaxy was the sum of the whole universe to the discovery of billions of galaxies in an increasingly expanding universe. But I have also observed the arrogance present when men pretend to a far greater and more perfect understanding that what is warranted. Science cannot pass judgment on the existence of God, for God exists outside the scope of science. Evolutionary or mechanical theories cannot explain ultimate origins, for such theories cannot explain the appearance of something from nothing. I have read just recently that even cosmologists are starting to say that prior to the big bang there was nothing. No matter, no energy. Nothing. Current attempts to explain the big bang from that perspective sound even more fanciful than anything a Christian might believe. By the way, I have come to the conclusion that I am opposed to the teaching of creationism in a science class for the many of the same reasons already given. When we eject God into the discussion, we enter the realm of divine revelation, a whole different topic better left for a philosophy or religion course. The reason a Christian believes that God created this universe is because God said He did. Science cannot be used to prove, either before or after the fact that this universe sprang from the activity of God.

Which brings me back to the original question, "How can a preacher become interested in astronomy?" I am not embarrassed or ashamed to affirm that I believe that this universe came into existence by God's power. I have a confidence that my conviction is reasonable and defensible, because it is a confidence based upon knowledge. I trust what God says concerning those things I cannot prove, because He has proven himself in those things that can be proved. This is the great value of history.

Continued on the back page

MONTHLY MEETING

Our monthly meeting will be held on the second Saturday of February, which is also Valentine's Day.

February 14th will be a big day for Astronomy! At 2:00 PM the day starts with the premier of the new planetarium show "Bad Astronomy." Right after the show is the "Great Observatories Image Unveiling" at 3:00 PM.

Bad Astronomy will also play at 4:00 and 7:00, but at 7:00 PM you should be at our monthly meeting!

Our topic this month is a demonstration of the SHARE II system by Sec. Rick Widmer. Rick has made quite a few changes. We can play DVDs, VHS tapes, computer images or live video from an assortment of cameras. With 120 watts per channel of audio and a projector that can handle up to a fifty foot screen, we can put on quite a show — anywhere. It runs on batteries!

Most of SHARE II is MVAS property, and just like the loaner telescopes, it can be used by anyone who is qualified. If you are interested, this is a meeting you won't want to miss.

I hope we can find a few people who are interested in working with the club's Stellacam and AstroVid 2000 cameras on a telescope. Eyepiece Projection is just one skill we need someone to figure out. We need to have several people who can use the cameras at public star parties, so please check them out and practice using them with your telescope!

Part of the meeting will be a viewing of a DVD about Japan's Kaguya (SELENE) lunar orbiter, with SHARE II. After the DVD I would like to discuss the most effective ways to use the SHARE system at our events.

Another thing we should discuss is demonstrations we can do for events like Astronomy day, and at major star parties. Some examples are making a comet and making craters in fine powder. If you have any other ideas, please bring them to the meeting. This is the International Year of Astronomy, so lets do some fun and different things to share astronomy with the public this year!

Following the Meeting we will be holding a star party in the Centennial Observatory.

A Preacher's Thought's concluded

Many skeptics have attempted to find other causes to the things written down in that book called the Bible, but have failed, because things that God did, he did within the sight of men. The testimony of these eyewitnesses is so powerful and so well grounded that for 2000 years, no amount of effort has succeeded in overturning them. The alternative explanations of the miracles of Jesus, his resurrection, or the rise of Christianity, fail the test of authenticity. I am willing to put my trust and confidence (also called faith) in God, because I have seen abundant proof that my confidence is well placed. When I aim my telescope toward the heavens, I am peering deep into God's handiwork. When I crack open a book about astronomy, I learn more of how the natural order operates. When I try my hand at such things as astrophotometry, I experience first hand the precision of this universe. How could a preacher not be interested in workshop of his God?

As to those things we believe to be scientifically true that appear to make such a belief in God irrational, I would humbly suggest that when all is said and done, any conclusion based upon science is the conclusion of imperfect men, and is subject to change. Such change is in fact the history of science.

DID YOU KNOW?

The first American satellite in orbit, Explorer I, was launched February 1, 1958.

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P.O. BOX 445
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http://www.mvastro.org/

Join author, blogger and science popularizer Phil Plait in an exploration of how astronomy is misunderstood and misused. This lively program examines claims of astrology, the so-called "Moon landing hoax," and more. Debuting February 14th 2009 at 2:00 p.m. in the Faulkner Planetarium.

The College of Southern Idaho
315 Falls Avenue
Twin Falls, ID 83301
Planetarium Ticket Sales: (208) 736-3059
Star Line Sky Info: (208) 732-MOON (732-6666)
Fax: (208) 736-4712

Faulkner Planetarium Schedule
Saturday, February 14th, 2009

Day	Time	Show
Saturday	2:00	Bad Astronomy: Myths and Misconceptions
	4:00	Bad Astronomy: Myths and Misconceptions
	7:00	Bad Astronomy: Myths and Misconceptions
	8:15	Lynyrd Skynyrd: Fly On Free Bird

Faulkner Planetarium Schedule
Beginning February 17th, 2009

Day	Time	Show
Tuesdays	7:00	Bad Astronomy: Myths and Misconceptions
Fridays	7:00	Bad Astronomy: Myths and Misconceptions
	8:15	Led Zeppelin: Maximum Volume 1
Saturdays	2:00	Planet Patrol: Solar System Stakeout
	4:00	Journey to the Edge of Space and Time
	7:00	Bad Astronomy: Myths and Misconceptions
	8:15	Lynyrd Skynyrd: Fly On Free Bird