

Newsletter of
The Black River Astronomical Society

Guidescope

Lorain County, Ohio

April 2018

Website: blackriverastro.org

Newsletter submissions: [Editor](#)

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--Wednesday, April 4, 7 p.m.: Regular meeting, Carlisle Visitors Center.
Dr. Rob Owen with more on Gravity Waves

--Thursday, April 12, 7 p.m.: Board meeting, Blue Sky Restaurant, Amherst

--Friday, April 13, 9-11 p.m.: Public observing, Nielsen Observatory (cloud
backup date Saturday, April 14, 9-11 p.m.)

--Friday, April 20, 9-11 p.m.: Public observing Nielsen Observatory (cloud
backup date Saturday, April 21, 9-11 p.m.)

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Visit Our Website

Explore if you will the informative BRAS [website](#) and all its interesting, timely [links](#), and join the interactive members-only [BRAS Forum](#) to better keep in touch.

Guidescope Contributions Wanted

If you have any wanted/for sale announcements, astronomical photos you've taken, interesting article links, equipment reviews, observing reports, or anything that you think the local amateur astronomy community could relate to, please send it to your [humble Guidescope editor](#) for inclusion in forthcoming issues. Many thanks.

~Bill Ruth

BOARD SUMMARY

MARCH 15, 2018

The BRAS Board of Directors meeting was called to order at 7:03 p.m. with 10 Directors present. The minutes from the February meeting were read and approved as was the Treasurer's report. Committee Reports followed with Bill Ruth our Secretary and *Guidescope* editor reporting that all was well and that he was getting some submissions for the newsletter. Thank you to all who have submitted articles, photos or information to enhance our way of communicating with you! The website committee reported that the website was operating as designed with no reported issues. Under Instrumentation, there was a brief discussion about sending the C-14 with the orange tube to Celestron for cleaning. There is a small spot of what we believe is mold on the inside of the corrector plate. The dec. lock is also slipping and can no longer be adjusted and the hand paddle has intermittent problems that we believe are issues with the socket into which the controller plugs. The scope has been in continuous operation at the observatory for 19 years and is due to be cleaned and upgraded. John Reising went into the storage building at the maintenance garage at the Equestrian Center, and brought the original flight case the scope came with to the Nielsen. We need to contact the powers that be at the LCMP to get their permission to ship the scope as this C-14 belongs to the Metro Parks. The OTAA committee had no new information to report, but Treasurer Dan Walker will contact the Birmingham United Methodist Church to make sure they have our September 8th date reserved for us, and to make a donation to them. The Metro Parks liaison had no report.

Programming is set for the year with only one open date. The full list follows:

April	Rob Owen	Black Hole research
May	Bill Ruth	Binocular Astronomy
June	John Reising	Mars Opposition
July	Micky Hasbrook	Lowell Observatory

August	Denny Bodzash	Solar Superstorms, EMP Attacks & Hardening the Grid
Sept.	Dave and John	Planetarium Program at the Oberlin College planetarium in Peters Hall
October	Annual Meeting of the Members/Elections/short video	
Nov.	OPEN	
December	Christmas Party and pot luck dinner at the LCMP Amherst Beaver Creek facility.	

Next came Old Business with another very brief discussion about sending in the orange C-14. For the second item, Schauer reminded the Directors that we have been approached by the Lorain South Branch Library about doing a program for them on Tuesday August 28th. Dan Walker, Jeff Walsh and Greg Zmina will be forwarded the email chain from them so they can arrange the appropriate details.

New Business followed with the first item being the voting in of a new member. Rose Fedan of Amherst is officially welcomed into the club, so Welcome, Rose! We are delighted that you have joined us. The second item is a request by Sargeant Sean Murray, Assistant Park Manager and Ranger at Carlisle. He is planning a camp out at the Equestrian Center and hoped that we would come out and open the observatory so campers could enjoy the heavens. Schauer gave him a list of dates when we would be doing Public Observing, but also assured him that we could likely accommodate other evenings if needed. He chose either June 1st or July 13th, both nights when we are scheduled to be there anyway, and will let us know which date is his final choice. The tentative plan is for us to do a short program of some kind for the campers which would include a tour of the observatory. Then, campers are free to stay for observing for as long as they wish. Sgt. Holmes does understand that our attendance is dependent on the weather. The third item of new business was an email that Schauer received from the Miami Valley Astronomical Society. They are celebrating the 100th anniversary of the club (!) and the 48th anniversary of their large star party the Apollo Rendezvous. This will be held on Saturday, June 9th, 2018 with an afternoon of speakers at the Boonshaft Museum of Discovery in Dayton, followed by a star party and Bar B Q dinner at the John Bryan State Park Observatory. For full information, please visit the MVAS website: www.mvas.org.

Next came a request from Jannah Wilson of the LCMP asking us to help with a scavenger hunt they are planning for Saturday May 12th. They would like us to open the observatory for solar observing on that day from approx. 11:30 a. m.-12:30 p.m. so participants in the scavenger hunt can arrive and do some viewing. Since this is a rain or shine event, we will have a short program planned for inside, in case the weather doesn't cooperate. Schauer, Walker, Greg Z. and perhaps Hasbrook have agreed to help and others are welcome.

Due to ongoing problems sending out text notifications, Lee Lumpkin was kind enough to change the BRAS Membership Forms. We removed a line that was available to add a second cell phone number, and replaced it with a line to designate what carrier is being used for cell and text service. Knowing the provider will simplify adding someone new to the TNS list. If anyone has old membership forms, please discard them and download new ones from the website.

Finally, Mike Harkey had a conversation with a retired professional photographer, Tim Ryan, who is selling some of his equipment such as tripods. He may be able to attend the April meeting with some items to sell.

Dates were set for April. Solar Observing will start in May with our participation in the LCMP Paddle and Pedal Festival at Lakeview Park in Lorain on May 20th from 11:00-3:00 p.m. The meeting was adjourned at 8:13 p.m.

~Steve Schauer

ε53227 11.6 30x1.2 } off of γ Leo
 ε53226 12.7 1.0 x 0.9 }
E11 Equator, Ecliptic Spring Constellations

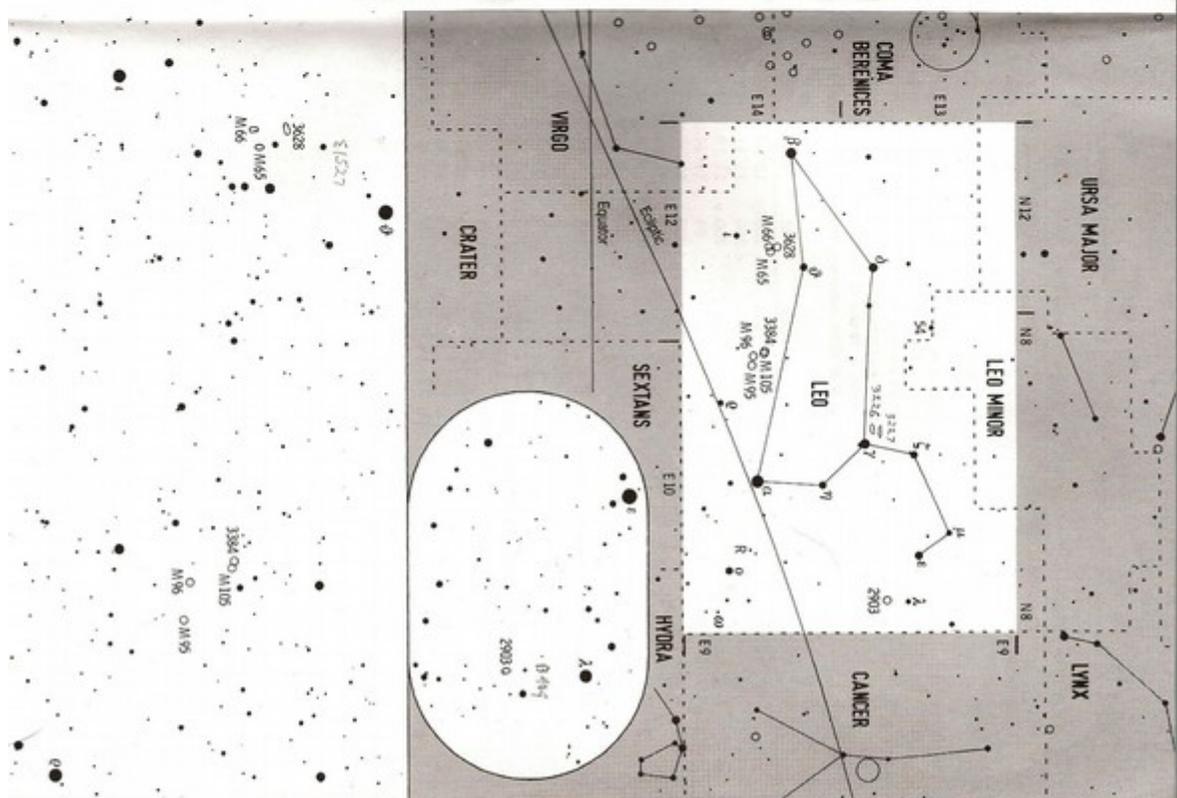
NEBULA	Position	v-Mag.	Size	Shape	Type	Vis.	Dist.	R.A.	Dec.
2903	Leo	9	13/4'	10'	0	Sb, G1k	25 Mly	9:37.2	21:50
3351	M 95	10	12	4	0	Sb, G1k	40 M	10:44.0	11:70
3368	M 96	10	12	5	0	Sa, G1k	40 M	10:46.8	11:82
3379	M 105	9	12	3	0	E1, G1k	40 M	10:47.8	12:58
3384	10	12	4	1	S0, G1k	40 M	10:48.3	12:63
3623	M 65	9	12	8	1	Sb, G1k	40 M	11:18.9	13:09
3627	M 66	9	12	6	1	Sb, G1k	40 M	11:20.2	13:00
3628	10	12	12	1	Sb, G1k	40 M	11:20.3	13:59

2903 Galaxy with bright oval center, asymmetric, relatively easy to find.
 3351 M 95 Stellar core, arms of barred spiral not detectable, 41' east of M 96.
 3368 M 96 Elongated halo and central area; it contains a bright stellar core.
 3379 M 105 Stellar core, more easily visible than M 95; it is 48' north of M 96.
 3384 Lies only 8' east of M 105, stellar core within a featureless nebula.
 3623 M 65 Circular central region within a very elongated asymmetric halo.
 3627 M 66 At the limit of visibility of binoculars; it is an interesting object in a telescope due to dark irregular dust features; the core is elongated.
 3628 Nicely elongated, a faint dust lane lies along the southern edge.

STAR	Position	V-Mag.	B-V	Te.	Abs.	Name	Dist.	R.A.	Dec.
2 α	Leo	5.4	0.6	1	3 ⁺		112ly	9:28.5	9:06
4 λ	Leo	4.3	1.5	-1		Alkef	320	9:31.7	22:97
14 φ	Leo	3.5	0.5	1	0		134	9:41.2	9:89
17 ε	Leo	3.0	0.8	-2			260	9:45.9	23:77
R	Leo	5.8-10	1.4	1	1		300	9:47.6	11:43
24 μ	Leo	3.9	1.2	1	1		134	9:52.8	26:01
30 η	Leo	3.5	0.0	-6			2000	10:07.3	16:75
32 α	Leo	1.4	*	-1	-1	Regulus	77	10:08.4	11:97
36 C	Leo	3.4	0.3	-1	-1	Alathafa	260	10:16.7	23:42
41 γ	Leo	2.0	* 1.1	-1	-1	Algieba	125	10:20.0	19:84
47 θ	Leo	3.8	-0.1	-6			3000	10:32.8	9:31
54 δ	Leo	4.3	* 0.0	0	0		290	10:55.6	24:75
68 ζ	Leo	2.6	0.1	1	1	Zosma	58	11:14.1	20:52
70 φ	Leo	3.3	0.0	0	0	Coxa	170	11:14.2	15:43
78 κ	Leo	4.0	* 0.4	2	2		80	11:23.9	10:53
94 β	Leo	2.1	0.1	2	2	Daneboba	36	11:49.1	14:57

BINARY	Position	V-Mag.	B-V	Te.	PA	Vis.	R	LEO	PERIOD
2 ω	Leo	5.9	6.5	0.6	0.6	11:0	0.6	2015	0.8
32 α	Leo	1.4	7.9	-1	0.9	11	175.9	4.7	312 d
41 γ	Leo	2.3	3.5	1.1	1.1	11	175.9	4.7	312 d
54 δ	Leo	4.5	6.3	0.0	0.1	11	6.6	6.6	312 d
78 κ	Leo	4.1	6.7	0.4	0.6	11:0	1.7	1.7	312 d
ε15 2-7	Leo	7-8		11	1.1	2015	2.1	2.1	312 d

VARIABLE STAR
 R Leo 312 d
 Period ≈ 312 d
 Max. ≈ 2451360
 Min. Max. +180
 Extrema 4.4-11.3
 The period varies
 by a few days.



Constellation of the Month courtesy of John Reising.

Deep-Sky Objects for April

Objects for Binoculars							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
09 ^h 41.2 ^m	+09°54'	14-Omicron	3.5, 9.5	85.4"	44°	Leo	Double Star
10 ^h 08.4 ^m	+11°58'	32-Alpha	1.4, 7.7	176.9"	307°	Leo	Double Star
10 ^h 16.7 ^m	+23°25'	36-Zeta	3.5, 5.8	325.9"	340°	Leo	Double Star
11 ^h 25.6 ^m	+16°27'	81 Leo	5.6, 9.2	55.7"	351°	Leo	Double Star
12 ^h 25 ^m	+26°0'	Mell 111	1.8v	4.6"		Leo	Open Cluster
Objects for Small Telescopes (2-6 inch)							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
10 ^h 55.6 ^m	+24°5.8'	54 Leo	4.5, 6.3	6.5"	110°	Leo	Double Star
11 ^h 5.8 ^m	+00°02'	NGC 3521	m9.0v	12.5'x6.5'		Leo	Galaxy
11 ^h 18.9 ^m	+13°05'	M65	m9.3v	8.7'x2.2'		Leo	Galaxy
11 ^h 31.7 ^m	+14°22'	88 Leo	6.4, 8.4	15.4"	328°	Leo	Double Star
11 ^h 20.2 ^m	+12°59'	M66	m8.9v	8.2'x3.9'		Leo	Galaxy
Objects for Medium-Size Telescopes (8-14 inch)							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
10 ^h 20.0 ^m	+19°51'	41-Gamma	2.2, 3.5	4.4"	125°	Leo	Double Star
10 ^h 20.3 ^m	+13°36'	NGC 3628	m9.5v	14.0'x4.0'		Leo	Galaxy
10 ^h 44.0 ^m	+11°42'	M95	m9.7v	7.8'x4.6'		Leo	Galaxy
10 ^h 46.8 ^m	+11°49'	M96	m9.2v	6.9'x4.6'		Leo	Galaxy
10 ^h 47.7 ^m	+13°59'	NGC 3377	m10.4v	4.1'x2.6'		Leo	Galaxy
10 ^h 47.8 ^m	+13°25'	M105	m9.3v	3.9'x3.9'		Leo	Galaxy (with NGC3384 & 3389)
Objects for Larger Telescopes (16-inch & larger) Challenge Objects							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
09 ^h 48.6 ^m	33°25'	NGC 3003	m11.9v	5.2'x1.6'		Lmi	Galaxy
10 ^h 13.8 ^m	+38°46'	NGC 3158	m11.9v	2.3'x2.2'		Lmi	Galaxy (In Group)
10 ^h 29.3 ^m	+29°30'	NGC 3254	m11.7v	4.9'x1.4'		Lmi	Galaxy
10 ^h 49.8 ^m	+32°59'	NGC 3395	m12.1v	1.6'x0.9'		Lmi	Galaxy, 3396 attached
10 ^h 50.9 ^m	+13°25'	NGC 3412	m10.5v	3.3'x2.0'		Leo	Galaxy
11 ^h 16.9 ^m	+18°03'	NGC 3607	m9.9v	4.6'x4.1'		Leo	Galaxy,(with 3605, 3608)
11 ^h 34.7 ^m	+16°48'	90 Leo	6.0, 7.3, 8.7	AB 3.3 AC 63.1	209° 234°	Leo	Double Star

Print and use the [Deep-Sky Interest Group - Observation Form](#) to record your observations.

Deep sky objects for April courtesy of Len Jezior.

Benjamin Franklin and the Truth about Daylight Savings Time

In March, the vast majority of Americans went through another much-hated time change. With all of the grumblings about having to switch the clocks and lose an hour of sleep, one very famous name often gets injected into the conversation: Benjamin Franklin. Why? Many people blame Franklin for the idea of setting the clocks ahead. But is he really to blame?

Short answer: no. Long answer: much more interesting.

The whole idea of blaming Benjamin Franklin for the advent of DST is rooted in a letter he wrote while serving as an envoy to France. The author of the maxim “early to bed, early to rise, makes a man healthy, wealthy, and wise” was clearly not seeing this in Paris. The entire city seemed out of sync with nature as many residents stayed up long after dark and burned through enormous numbers of candles and then proceeded to completely sleep the morning away the following day.

It was this lack of following the natural cycle of things that bothered Franklin, who saw staying up long past nightfall as wasteful as little constructive activities could be done then and sleeping away the morning, prime time for getting things done, as a double waste of valuable time.

Then Franklin, tongue planted firmly in cheek, picked up a pen.

In his letter to the *Journal of Paris*, signed only 'a subscriber,' Franklin proposes a novel idea to eliminate all of the wasted candles: going to bed earlier, which would also lead people to wake up earlier and thus be able to make full use of the morning. He also humorously suggests limiting people to 1 pound of candles a week, posting guards in front of candle shops, banning all carriage traffic after dark save medical professionals, and ringing all the church bells at sunrise. Church bells not doing the job? Fire cannons in the street to wake the 'sluggards.'

And it is for this reason that Benjamin Franklin gets blamed for DST. Clearly by reading the letter, reproduced in-full below, there is no mention anywhere of changing the clocks. By looking at how much the world has changed in the 234 years since Franklin wrote his letter in 1784, one would have to wonder what Franklin would think of our modern 24/7, energy drink chugging, constant go go go world.

He would probably tell us to stop and smell the roses.

“MESSIEURS,

You often entertain us with accounts of new discoveries. Permit me to communicate to the public, through your paper, one that has lately been made by myself, and which I conceive may be of great utility.

I was the other evening in a grand company, where the new lamp of Messrs. Quinquet and Lange was introduced, and much admired for its splendour; but a general inquiry was made, whether the oil it consumed was not in proportion to the light it afforded, in which case there would be no saving in the use of it. No one present could satisfy us in that point, which all agreed ought to be known, it being a very desirable thing to lessen, if possible, the expense of lighting our apartments, when every other article of family expense was so much augmented.

I was pleased to see this general concern for economy, for I love economy exceedingly.

I went home, and to bed, three or four hours after midnight, with my head full of the subject. An

accidental sudden noise waked me about six in the morning, when I was surprised to find my room filled with light; and I imagined at first, that a number of those lamps had been brought into it; but, rubbing my eyes, I perceived the light came in at the windows. I got up and looked out to see what might be the occasion of it, when I saw the sun just rising above the horizon, from whence he poured his rays plentifully into my chamber, my domestic having negligently omitted, the preceding evening, to close the shutters.

I looked at my watch, which goes very well, and found that it was but six o'clock; and still thinking it something extraordinary that the sun should rise so early, I looked into the almanac, where I found it to be the hour given for his rising on that day. I looked forward, too, and found he was to rise still earlier every day till towards the end of June; and that at no time in the year he retarded his rising so long as till eight o'clock. Your readers, who with me have never seen any signs of sunshine before noon, and seldom regard the astronomical part of the almanac, will be as much astonished as I was, when they hear of his rising so early; and especially when I assure them, *that he gives light as soon as he rises*. I am convinced of this. I am certain of my fact. One cannot be more certain of any fact. I saw it with my own eyes. And, having repeated this observation the three following mornings, I found always precisely the same result.

Yet it so happens, that when I speak of this discovery to others, I can easily perceive by their countenances, though they forbear expressing it in words, that they do not quite believe me. One, indeed, who is a learned natural philosopher, has assured me that I must certainly be mistaken as to the circumstance of the light coming into my room; for it being well known, as he says, that there could be no light abroad at that hour, it follows that none could enter from without; and that of consequence, my windows being accidentally left open, instead of letting in the light, had only served to let out the darkness; and he used many ingenious arguments to show me how I might, by that means, have been deceived. I owned that he puzzled me a little, but he did not satisfy me; and the subsequent observations I made, as above mentioned, confirmed me in my first opinion.

This event has given rise in my mind to several serious and important reflections. I considered that, if I had not been awakened so early in the morning, I should have slept six hours longer by the light of the sun, and in exchange have lived six hours the following night by candle-light; and, the latter being a much more expensive light than the former, my love of economy induced me to muster up what little arithmetic I was master of, and to make some calculations, which I shall give you, after observing that utility is, in my opinion the test of value in matters of invention, and that a discovery which can be applied to no use, or is not good for something, is good for nothing.

I took for the basis of my calculation the supposition that there are one hundred thousand families in Paris, and that these families consume in the night half a pound of bougies, or candles, per hour. I think this is a moderate allowance, taking one family with another; for though I believe some consume less, I know that many consume a great deal more. Then estimating seven hours per day as the medium quantity between the time of the sun's rising and ours, he rising during the six following months from six to eight hours before noon, and there being seven hours of course per night in which we burn candles, the account will stand thus;--

In the six months between the 20th of March and the 20th of September, there are

	Nights	183
Hours of each night in which we burn candles		7
Multiplication gives for the total number of hours		1,281
These 1,281 hours multiplied by 100,000, the number of		
	inhabitants, give	128,100,000
One hundred twenty-eight millions and one hundred		
thousand hours, spent at Paris by candle-light, which, at		
half a pound of wax and tallow per hour, gives the weight		
	of	64,050,000
Sixty-four millions and fifty thousand of pounds, which,		
estimating the whole at the medium price of thirty sols		
the pound, makes the sum of ninety-six millions and		
seventy-five thousand livres tournois		96,075,000

An immense sum! that the city of Paris might save every year, by the economy of using sunshine instead of candles. If it should be said, that people are apt to be obstinately attached to old customs, and that it will be difficult to induce them to rise before noon, consequently my discovery can be of little use; I answer, *Nil desperandum*. I believe all who have common sense, as soon as they have learnt from this paper that it is daylight when the sun rises, will contrive to rise with him; and, to compel the rest, I would propose the following regulations:

First. Let a tax be laid of a louis per window, on every window that is provided with shutters to keep out the light of the sun.

Second. Let the same salutary operation of police be made use of, to prevent our burning candles, that inclined us last winter to be more economical in burning wood; that is, let guards be placed in the shops of the wax and tallow chandlers, and no family be permitted to be supplied with more than one pound of candles per week.

Third. Let guards also be posted to stop all the coaches, &c. that would pass the streets after sunset, except those of physicians, surgeons, and midwives.

Fourth. Every morning, as soon as the sun rises, let all the bells in every church be set ringing; and if that is not sufficient?, let cannon be fired in every street, to wake the sluggards effectually, and make them open their eyes to see their true interest.

All the difficulty will be in the first two or three days; after which the reformation will be as natural and easy as the present irregularity; for, *ce n'est que le premier pas qui coûte*. Oblige a man to rise at four in the morning, and it is more than probable he will go willingly to bed at eight in the evening; and, having had eight hours sleep, he will rise more willingly at four in the morning following. But this sum of ninety-six millions and seventy-five thousand livres is not the whole of what may be saved by my economical project. You may observe, that I have calculated upon only one half of the year, and much may be saved in the other, though the days are shorter. Besides, the immense stock of wax and tallow left unconsumed during the summer, will probably make candles much cheaper for the ensuing winter, and continue them cheaper as long as the proposed reformation shall be supported.

For the great benefit of this discovery, thus freely communicated and bestowed by me on the public, I demand neither place, pension, exclusive privilege, nor any other reward whatever. I expect

only to have the honour of it. And yet I know there are little, envious minds, who will, as usual, deny me this and say, that my invention was known to the ancients, and perhaps they may bring passages out of the old books in proof of it. I will not dispute with these people, that the ancients knew not the sun would rise at certain hours; they possibly had, as we have, almanacs that predicted it; but it does not follow thence, that they knew *he gave light as soon as he rose*. This is what I claim as my discovery. If the ancients knew it, it might have been long since forgotten; for it certainly was unknown to the moderns, at least to the Parisians, which to prove, I need use but one plain simple argument. They are as well instructed judicious, and prudent a people as exist anywhere in the world all professing, like myself, to be lovers of economy; and, from the many heavy taxes required from them by the necessities of the state, have surely an abundant reason to be economical. I say it is impossible that so sensible a people, under such circumstances, should have lived so long by the smoky, unwholesome, and enormously expensive light of candles, if they had really known, that they might have had as much pure light of the sun for nothing. I am, &c.

A SUBSCRIBER”

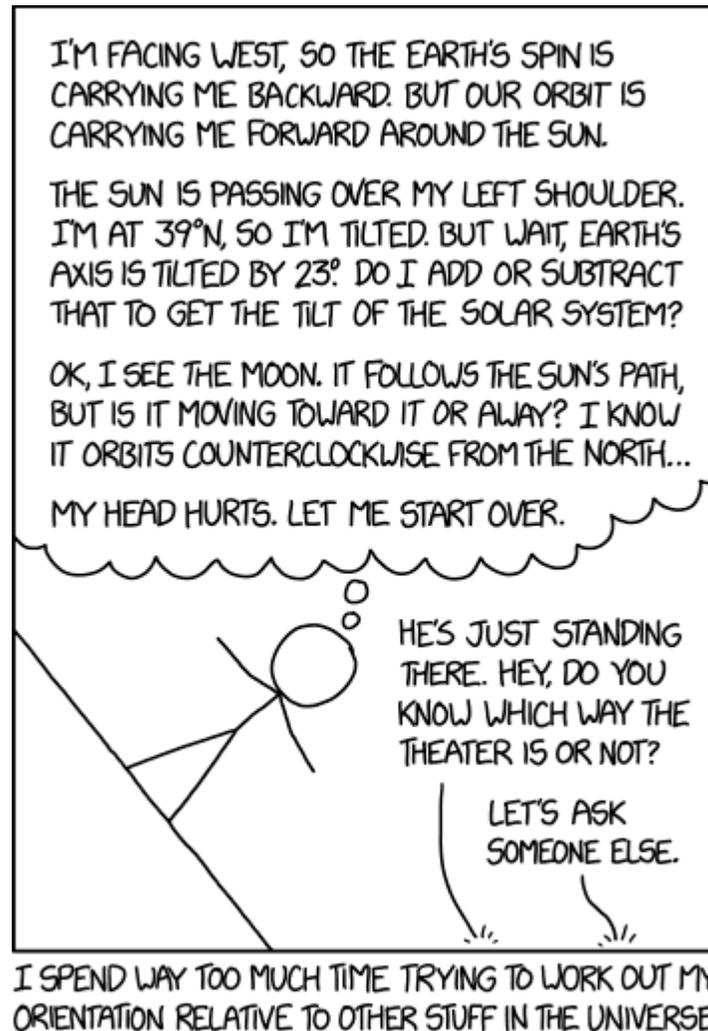
~contributed by Denny Bodzash



Moon, Venus, and Mercury, 3/18/18, 8:20 p.m.

~Lee Lumpkin

Spatial Orientation



<https://xkcd.com/1964/>

(Be sure to catch the mouse-over pop-up text when viewing complete on-line version at the link.)

~Lee Lumpkin

Q. What kind of tea is made in The Teapot?

A. Celestial Seasonings.

~Herb Hadders