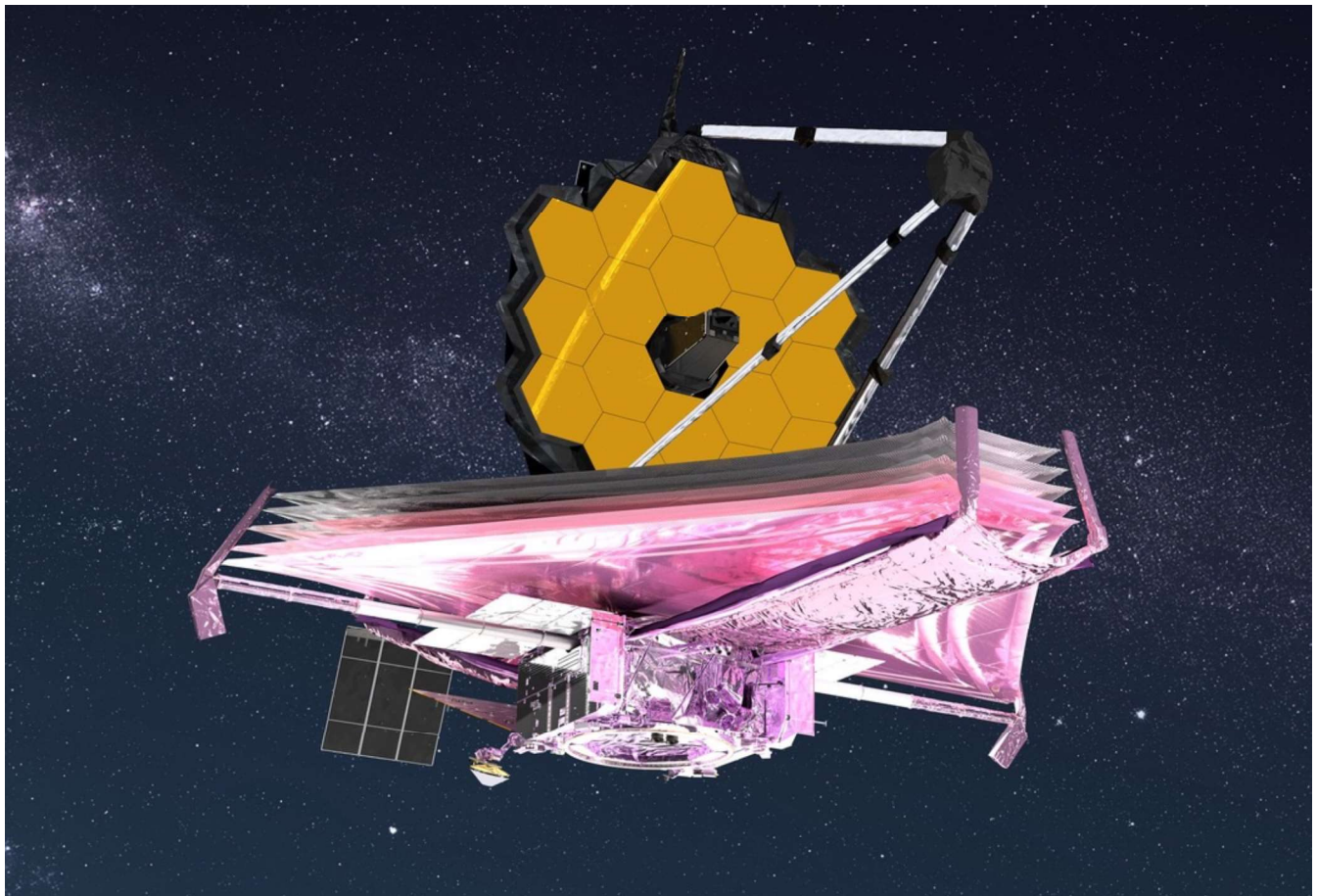


## FEBRUARY 2022 NEWSLETTER

### Who Is James Webb and Why Is He Looking 13 Billion Years Back in Time?



At 5:20 a.m. on Christmas Day, when many of us were concerned more with the launch and landing of Santa's sleigh, the James Webb Space Telescope left the ground packed inside the nosecone of an Ariane 5 rocket from Europe's Spaceport in French Guiana. (Why there, you ask? The spaceport sits just north of the Equator, which gives an advantage--angular momentum--to spacecraft, saving fuel.) A partnership of 14 countries, Webb was named for the man President Kennedy had picked to administer the NASA space program. A former Marine, lawyer, business executive, and public servant, Webb was not a scientist or engineer. But he

had the vision and perseverance not only to get humans to the moon but also to imagine putting big telescopes into space to find clearer views.

Webb weighs almost seven tons and has a mirror diameter of 21 feet, the largest, most complex, and most expensive telescope ever built. By contrast, the Hubble is just under 8 feet in diameter. According to the lead scientist, Nobel laureate John Mather, it has the light gathering ability 100 times that of Hubble. Why does that matter? It can see things much fainter, much further away, much older, and at wavelengths that see through the dust and debris of space.

How did the engineers get such a huge telescope in the nosecone of a rocket? They folded it up like origami. Once launched and out of the nosecone, it unfolded one step at a time over many days. The mirror itself is actually 18 hexagons that fit together, each of which can be precisely angled to achieve the best effect. Full deployment of the mirror segments finished in mid-January, with tweaking and testing to continue for months. Once all is set, light will bounce off the big mirror to a little mirror in front and eventually into several devices that interpret the data, much as our eye and brain would looking into a telescope eyepiece. But Webb can see many things invisible to human eyes.

To give it the coolest and darkest environment to operate, the Webb orbits about a million miles from Earth, at LaGrange 2 (L2), one of five points in the solar system where the Sun's and Earth's gravitational pulls balance with centrifugal trajectory forces. That will allow the Webb to stay on orbit with less fuel and to keep it on the other side of the Earth from the Sun. Keeping it as cool as possible (how about 388 degrees F. below zero?) turns out to be a big deal. To achieve that, it also deployed five layers of tennis-court sized fabric to block the Sun's rays and keep the hot side away from the mirror.

On January 24, Webb successfully inserted into a small orbit around L2, four times the distance to the moon. What happens if something goes wrong? When the Hubble's mirror was found to be defective, its orbit was close enough to send up astro-repair-nauts to fix it. We can't do that with the Webb, so its functions must be perfect. Since its start in 1995, Webb took many years of design, construction, testing, testing, and yet more testing to have confidence it would work as desired.

What will Webb look at? It has several main projects: peering back into the beginning of the universe; finding and evaluating potential for life on planets that orbit other stars (exoplanets); and learning more about how stars and galaxies form. Everyone is eligible to submit research proposals for its use.

Because of the first goal, it is being called a "time machine." Imagine that light left an early star over 13 billion years ago, not long after the believed beginning of the universe (Big Bang or otherwise) and has been traveling in space at the speed of light since then. In effect,

when the star's light hits the Webb, it will see the star as it was 13 billion years ago – a look back in time. How will scientists know the light is “old” rather than “new”? (All starlight is at least a bit old; the closest star to us, other than our sun, is the triple star system, Alpha Centauri, over four light years from earth. When we look at it, we are seeing it as it was four years ago.) One way is to measure the amount of its redshift -- to infrared from ultraviolet and visible light-- as it travelled. For this reason, among others, Webb is optimized to view infrared light rather than visible (to our eyes) light. Because heat is infrared, it is critical to keep Webb cool and not muddy its view with extraneous heat.

A second goal is to examine relatively “nearby” stars (including Proxima Centauri) for planets that might have environments similar to ours – with water in liquid form, not too far or too close to their own suns – and could be habitable by organic life. Given the probable number of stars in the universe, cosmologists estimate **300 million** such planets exist. About 4000 have already been identified as good targets for atmospheric evaluation.

Now I can hear some of you saying, “Wait a minute. Are there even that many stars in the universe? I can see only a few hundred.” Yes, and unimaginably more. (All the stars we can see with our eyes alone number at most a few thousand and virtually all are in our own Milky Way galaxy. And we see only a tiny, tiny fraction of those.)

How do we know there are so many more? More or less because astronomers have seen so many more galaxies with telescopes. For example, back in 1995 Bob Williams, Director of the Space Telescope Science Institute, had a great deal of Hubble's viewing time to use by virtue of his position. He decided to point Hubble for 100 hours at a tiny dot of night sky near the big Dipper that seemed to be empty. How big was that dot? Go outside and hold a grain of salt at arm's length as you look up at the sky. The part of the sky your salt grain obscures is how big. No prior telescope could see anything there. Williams' colleagues were outraged that he would waste valuable Hubble time on such an exercise. But Williams thought Hubble would find something new and was prepared to resign his position if wrong. He (Hubble) took 342 photos, with exposures between 25 and 45 minutes. Well, that “empty” dot in the sky was actually stuffed with about **3,000 galaxies**. With that discovery alone, the number of estimated galaxies in the universe went to 50 billion, an estimate that now stands at *two trillion*.

So, if the universe contains that many galaxies, how many stars are we talking about? We can estimate by extrapolating from our own galaxy, the Milky Way, which is estimated to contain about **100 billion** stars. (The Webb, whose infrared eyes can see through the dust and debris that cloud our attempts to view deeply into the Milky Way, will help refine that estimate.) If the Milky Way is average (it might be bigger than average), we simply multiply 100,000,000,000 (“our” galaxy's 100 billion stars) times 2,000,000,000,000 (two trillion galaxies). The multiplication is simple: 2x1 trailed by the total number of zeros above (23), or

200,000,000,000,000,000,000 stars. Even if this estimate is off by trillions or more, it's still a boatload of stars. As former Senator Everett Dirksen once said of the defense budget: "A billion here and a billion there, and pretty soon you're talking real money." We're talking real stars.

Webb is scheduled to start work in earnest this summer, after about six months of cooling, tweaking, and testing. In the meantime, if you would like to know more, one good source is You Tube. Just search for "Webb Telescope" and choose from dozens of videos from several excellent scientific sources.

---///---///---///---

Once again, the Newsletter is without a resident profile. If you are inspired to contribute or be profiled, please drop me (Chris Wells) a line at [wells\\_dc@law.mercer.edu](mailto:wells_dc@law.mercer.edu). The usual deadline for getting finished articles, announcements, etc. to me is the 25<sup>th</sup> of the month. If they will need editing or other assistance, earlier is better.

### **Need help with a small household task?**

Mark Kenning and Chris Wells are available to do minor handyman chores. Need grab bars installed, light bulbs changed, pictures hung, walks shoveled, stereos wired, holes drilled, nails pounded, planters repaired, someone to hold your ladder (or to climb up on one), or other minor tasks done *not* requiring a real pro or formal HOA approval? As always, services are free.

Mark Kenning: [patamk7@gmail.com](mailto:patamk7@gmail.com)

Chris Wells: [wells\\_dc@law.mercer.edu](mailto:wells_dc@law.mercer.edu)

970-889-5226

478-361-2691

### **Message of Appreciation**

I would like to send a huge "Thank You" to wonderful friends and neighbors in Adriel Hills. When my husband Frank passed away before Christmas and during his short time with Hospice at home, I felt like I had a warm blanket around me. There was help to move furniture, food, many beautiful cards, phone calls, suddenly the driveway was shoveled, all angels in disguise. My children also felt grateful. How fortunate to live in Adriel Hills.

**Annette DeMeyer**

## 2022 Book Club List

(meetings are in Clubhouse on the last Wednesday of the month at 10 a.m.)

(Contact Betsy Towle at [mtowle0@gmail.com](mailto:mtowle0@gmail.com) if you have questions.)

Feb: The Rose Code, by Kate Quinn

Mar: The Book of Hope: A Survival Guide for Trying Times, by Jane Goodall

Apr: State of Terror, by Hillary Clinton and Louise Penny

May: The Henna Artist, by Alka Joshi

June: O Pioneers!, by Willa Cather

July: Slaughterhouse-Five, by Kurt Vonnegut, Jr.

Aug: 2021 Northern Colorado Writers Anthology: Charioscuro: An Anthology of Virtue and Vice

Sept: Talking to Strangers, by Malcolm Gladwell

Oct: The Hemmings of Monticello, by Gordon Reed

Nov: The Collector's Daughter, by Gill Paul

## Jim O'Neill and Band Play at Wellington Community Center

I had a fun experience that I would like to share with the AH community. I am a month late for submitting this to Chris Wells for the newsletters but better late than never.

On Wednesday, December 15, 2021, Audi Hertz and I visited the Wellington Senior Center and listened to a five-person band playing, generally speaking, country music. We were invited to hear this group of musicians perform by our very own Jim O'Neill who is a neighbor of Audi and mine. Jim sings and plays guitar in the band.

The band consists of a guitar (Jim), a banjo, a cello (Interesting! Right?), an electric guitar and an electric bass guitar. And I mean to tell you that they really played well. We were entertained by such songs as: Cowboy Christmas, Christmas in the Mountains, Tumbling Tumbleweed, Children, Don't You Think it's Time to Go to Bed, Pretty Snowflakes, Don't This Road Look Rough and Rocky, I Saw Mama Kissing Santa Claus, and several traditional Christmas carols.

Thanks to Jim for inviting us to hear the band and thanks to the band for providing such wonderful entertainment.

Jim's band performs at the Wellington Senior Center (3800 Wilson Ave., Wellington, CO 80549) most Wednesday mornings at 10:30 AM. You may want to check it out some time. It is a really fun experience.

**Rosalind Larsen**

## Skiing Anyone?

Interested in downhill skiing during the middle of the week? Let's talk! (Skiers aged 70 or older ski free at Snowy Range outside Laramie!)

**Mark Kenning** (970) 889-5226

--//--//--//--

## Manager's Report

The crew is working on many small projects around the repair and maintenance of all our machines and tools. We are gathering audits on deck, concrete/pavement, paint and building maintenance for the upcoming fiscal year. The process of budget analysis is underway. I will present a dissertation to the board in the coming weeks to start the budget process.

**Admin:** April is working hard trying to straighten out the office and files. It was in disarray when she got back in there, but she is digging out and things are looking better. There is still some work to be done but she is a very capable. Things are looking up for our community.

**Golf Course:** As you can see in the snow the golf course is getting a lot of traffic this winter. Please be aware that **no one should be using the golf course for anything other than golf.** We spend half our yearly budget on the golf course. Please keep your dogs, kids and yourself off the course especially the greens. People walking on the greens during winter does major damage to our greens that can take all summer to heal. If it is 40 degrees or below stay off the course. Please don't put management in the position to have to ask you to get off. **Just stay off!!**

**Tennis Court:** Please do not try shoveling the tennis court. Any type of shovel will scratch the surface as we saw last year when neighbors tried to help out. Let it melt naturally so we don't have any issues.

**Covid:** The rules are simple. Please wear a mask while in the clubhouse. I know it's a pain but the board has put these rules into effect to protect everyone. As soon as the county eases the mandate so will we. Please wear a mask.

**Parking:** Please read the rules and regulations on parking. The parking can be tricky and tight. If you haven't, please stop by the office and get a parking sticker for your car. Also, if you have more than two vehicles, we need to know that as well. The parking is not always perfect but with a little patience and neighborly consideration we should all be able to work together to meet the issues and solve them.

**Trash Dumpsters:** We are having an issue with outside people who think their trash is our problem. I keep an eye out for this and I am asking you to do the same. If you see something funny, please call me right away. Most of the time it's in the middle of the night or early morning but I've busted them all day.

**Dog Walkers:** Adriel Hills is a great place to walk your dog. Unfortunately, as the snow melts the piles of dog poop show. Please don't think this is anyone else's problem to pick up. Pick up after your dog. If you see someone who doesn't, please remind them of our HOA rules. **It's your responsibility to pick up after your dogs and keep them on a leash.**

**Operations:** We are putting the finishing touches on landscape projects that need to be done. It's been a slow fall for projects as we are letting the landscape committee get on their feet. They are starting to roll along so we will soon be out doing projects around the property.

**Snow Removal:** When you see the skid or any plow machinery, please do not walk up to the operator. Stand back and flag him down. The machines we use are dangerous. Keep your eyes open when it snows; our skid steer could be right around the next corner.

**Water:** We are gaining much needed data on our water system and use. As I have written before, we need to make Adriel Hills less thirsty. Any ideas, thoughts or experience in water management is welcome. It all starts with the little things we can do at home. The future is in water savings; let's make Adriel Hills an example of how a community can do their part as a whole to save our precious resource for the future.

The lightness that now falls on Adriel Hills is very satisfying. I have heard from many residents that it's wonderful to go to the clubhouse and see smiling faces. I have also heard from residents that the board meetings are something they want to attend. There's so much interest in what is going on now with the HOA, people are interested again after many years of not attending. We had 27 people at the last BOD meeting; it is so nice to see. We need to be welcoming while meeting the service needs of our residents. Adriel Hills is a great place to be and with the positive energy we have now our goals are to make this an even better place to live. I have an open-door policy so stop by and talk if you're in the neighborhood.

**Danny**

--//--//--//--

## News from the Landscape Committee

1. Homeowner Requests – We have had four homeowner requests; one completed and three in process. If you would like to submit a landscape request, please get a form from the AH office, fill it out and return it to the office. It will be forwarded to the Landscape Committee, who will evaluate it and send it to the property manager, who will also evaluate and determine a cost for completion. As soon as we have funds, the request will be completed.
2. Landscape Maintenance and Enhancement - After walking all of AH, we have identified many trees and bushes that are dead or dying. We are working with the property manager to remove and replace dead bushes and Davey Tree to remove dead trees and stumps. There are also many areas with no plants, only rocks, so some greenery to enhance these properties is needed. Danny will present to the Board of Directors in their budget session a total picture of what needs to be done. We realize this will cost a lot more than our allotted budget, but we want the Board to know the situation. We will work with whatever money the Board gives to us, recognizing that to remedy the total situation will take a long time.
3. Grants –We are currently working on a grant proposal from South Platte Basin Water Conservancy (SPBWC) to upgrade our irrigation system. A grant from them requires a 25% ante, so we will use \$10,000 already spent on a variable speed controller for this. The grant deadline is April 1, with a July date to finalize. Next fall we will submit a grant application to Northern Water. A subsequent application to SPBWC will request funds for re-landscaping our greenbelt by the ditch with a walking trail, new trees, bushes, and benches. Our goals are to minimize use of water, provide natural habitat, and enhance the enjoyment of our residents. Later this spring we will survey residents so we have demographics and wants/needs of our community and use this information for later improvements, such as a children’s playground, mother’s waiting area and exercise path. We are also working with the Area Development Committee to reconstruct the area east and south of the golf course to provide a buffer for the Turnberry extension. This may involve, among other things, creating a berm and planting trees.

Any re-landscaping costs described in 1 and 2 are paid with HOA funds; 3 will be paid for through grants.

**Isabel Garity**



## Hospitality Committee Update

Newcomer Welcome: The committee plans to reinstate an old AH tradition of welcoming new residents with a basket (or something similar) containing info about our community and some goodies. Due to COVID precautions it may be a while before we can actually visit and get to know our new neighbors, but that's the eventual plan.

Community Activities: Volunteers are needed for community social activities. Although there were few responses to our Events Questionnaire, the results are as follows:

Willing to help with:	National Night Out	3
	Christmas Party	5
	Soup Supper	3
	Golf Outing & Picnic	3
	Spring Carnival	1
	End of Summer Bash	2
	Super Bowl Party	1

We can proceed with the Golf Outing/Picnic, National Night Out, Soup Supper, and Christmas Party. We want to have more community social events, but volunteers would be needed for them. Obviously, events to be held indoors right now are off the table due to COVID restrictions. We hope that restrictions will be eased so that we may have indoor events later in the year. We will continue to ask for volunteers to help with events as their dates approach. Just give any of us a call, text, or email if you missed the questionnaire and want to get involved!

Katherine Sundberg: 303- 350-8864, [katherinejsundberg@gmail.com](mailto:katherinejsundberg@gmail.com)

Betsy Towle: 973-670-9059, [mtowle0@gmail.com](mailto:mtowle0@gmail.com)

Audi Hertz: 970-214-8649, [audithecar1@gmail.com](mailto:audithecar1@gmail.com)

Miranda Pratt: 478-951-2704, [mirandapratt2@gmail.com](mailto:mirandapratt2@gmail.com)

Iris Schachte: 520-400-7616, [iris.schachte@gmail.com](mailto:iris.schachte@gmail.com)

Marcy Lockhart: 970-217-8967, [marcydl4061@gmail.com](mailto:marcydl4061@gmail.com)

PS: We are also very open to new ideas!

**Betsy Towle**

# FEBRUARY 2022 CALENDAR

## Administrative and Management Office Hours

Administrative Office	M-F 8:30 a.m. – 12:30 p.m. or by appointment
Management Office Hours	M-F 8:00 a.m. - 3:30 p.m. Lunch approximately 12:00 a.m. – 1:00 p.m.

## Community Activities/Events

Clubhouse/Library/Pool	Daily 8:00 a.m. – 10:00 p.m.
Tennis	MWF 2 p.m. Or as otherwise agreed, weather & dry courts permitting
Pickle Ball	Tuesday, Thursday, Saturday 9:30 a.m. (beginner) Tuesday, Saturday 8:00 a.m., Thursday 7:00 p.m. (advanced) Or as otherwise agreed, weather & dry courts permitting Location: Tennis Courts
Book Club	Last Wednesday of each month 10:00 a.m. Location: Clubhouse
Game Night	Thursday 4:00 p.m. – 6:00 p.m. Location: Clubhouse
Wine & Unwind	Tuesday 4:00 p.m. – 6:00 p.m. Location: Clubhouse

## Maintenance Projects

Snow removal and equipment maintenance

## Board of Directors' Meeting

Board Meeting Tuesday, February 15th, 6:00 p.m. via ZOOM

(Connection to zoom meeting will be available on the Board agenda the week prior to the meeting); agenda and Treasurer's Report will be emailed or distributed to pigeon holes for homeowners and posted on the website.