



National Aeronautics and
Space Administration



FIRST WOMAN

NASA'S PROMISE FOR HUMANITY

ISSUE No. 2: EXPANDING OUR UNIVERSE



NOT FOR SALE
For General Public Use



XR-ENABLED
(VIRTUAL + AUGMENTED REALITY)
GRAPHIC NOVEL

For more information visit:
www.nasa.gov/calliefirst

First Woman Graphic Novels and Interactive Experiences

These graphic novels and accompanying interactive experiences tell the tale of a fictional character, Callie Rodriguez, the first woman to ever explore the Moon.

Join Callie's journey to the Moon by scanning the QR codes and downloading the *First Woman* app. For additional information and more content, visit: www.nasa.gov/calliefirst.

INTERACTIVE EXPERIENCES: GUIDE



QR Codes

- ⌘ Open the camera on your device
- ⌘ Point the camera at the QR Code
- ⌘ Click on the website pop-up and explore!



Download and XR Icon

- ⌘ Go to Google Play or the App Store to download the *First Woman* app
- ⌘ Launch the app on your device
- ⌘ Scan pages in the graphic novel with the XR icon or explore them directly in the app!



Disclaimer: The use of any name, manufacturer, or organization within this work does not explicitly or implicitly convey NASA's endorsement of commercial goods or services.



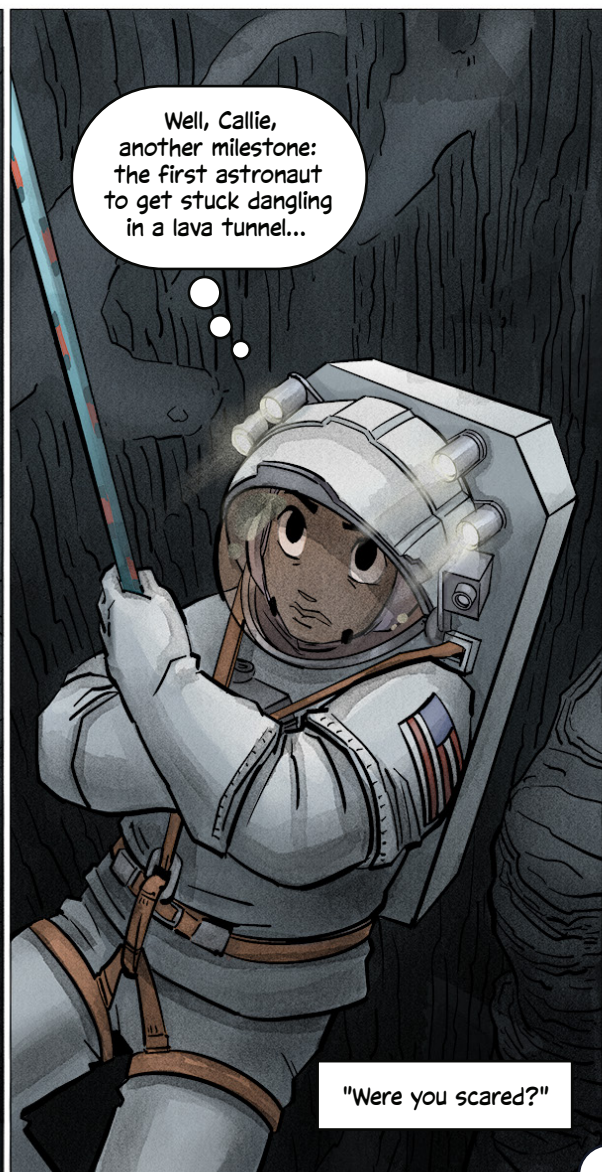
Hello?!
Mission Control!
It's Callie!

Are you
receiving?!



Lunar Outpost?
Dan?!

Hello? Is anyone
there?

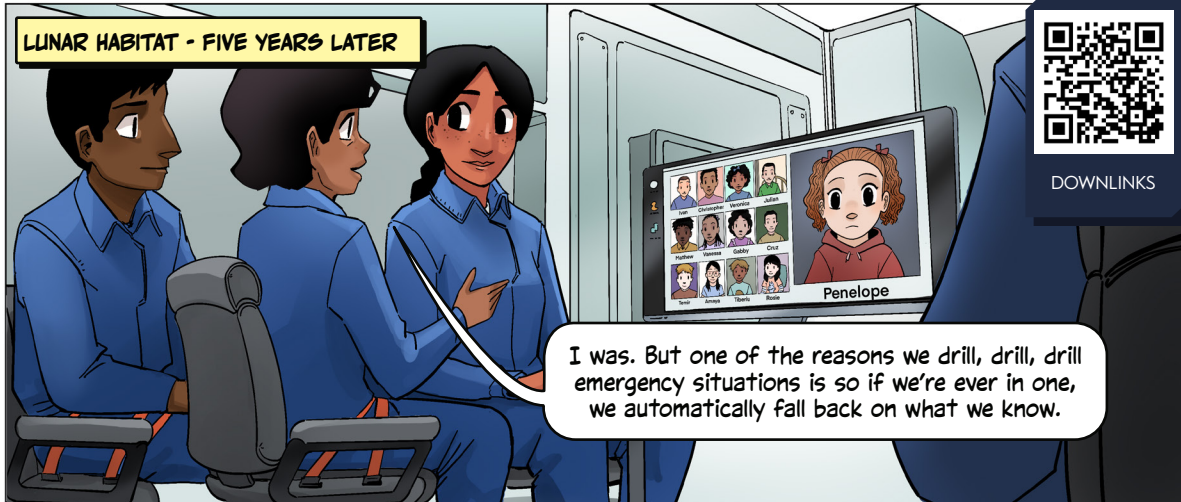


Well, Callie,
another milestone:
the first astronaut
to get stuck dangling
in a lava tunnel...

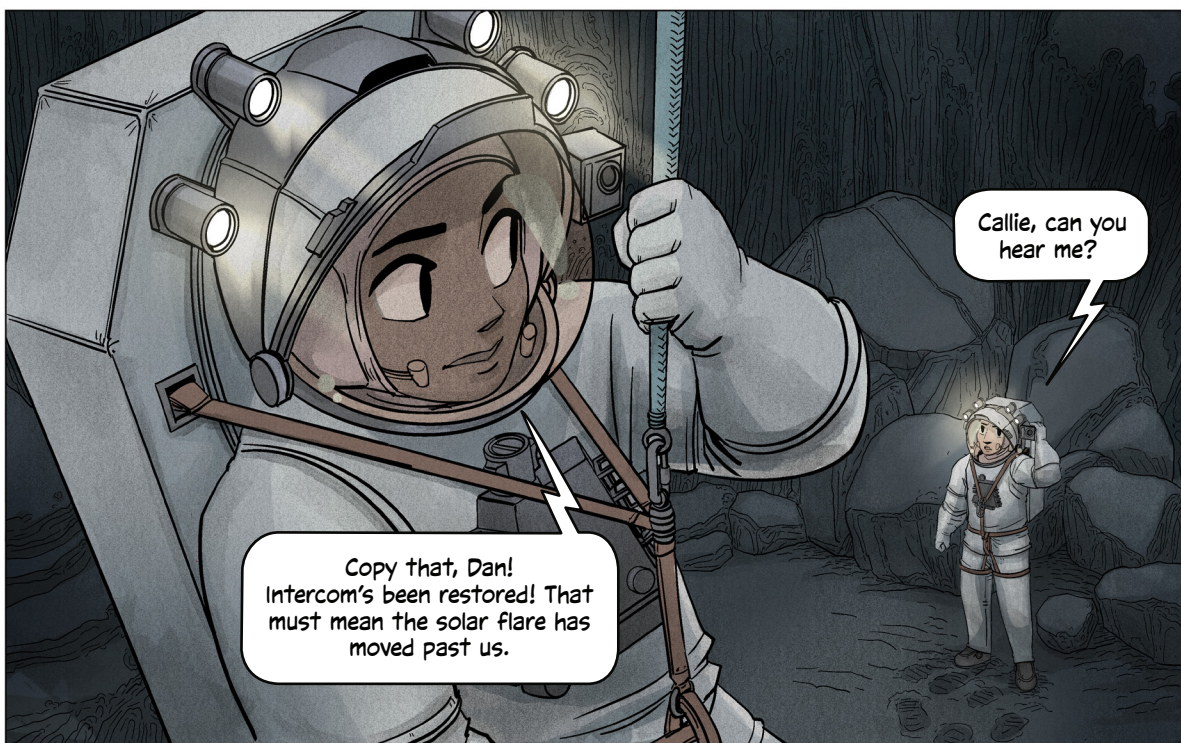
"Were you scared?"



DOWNLINKS



I was. But one of the reasons we drill, drill, drill emergency situations is so if we're ever in one, we automatically fall back on what we know.



Callie, can you hear me?

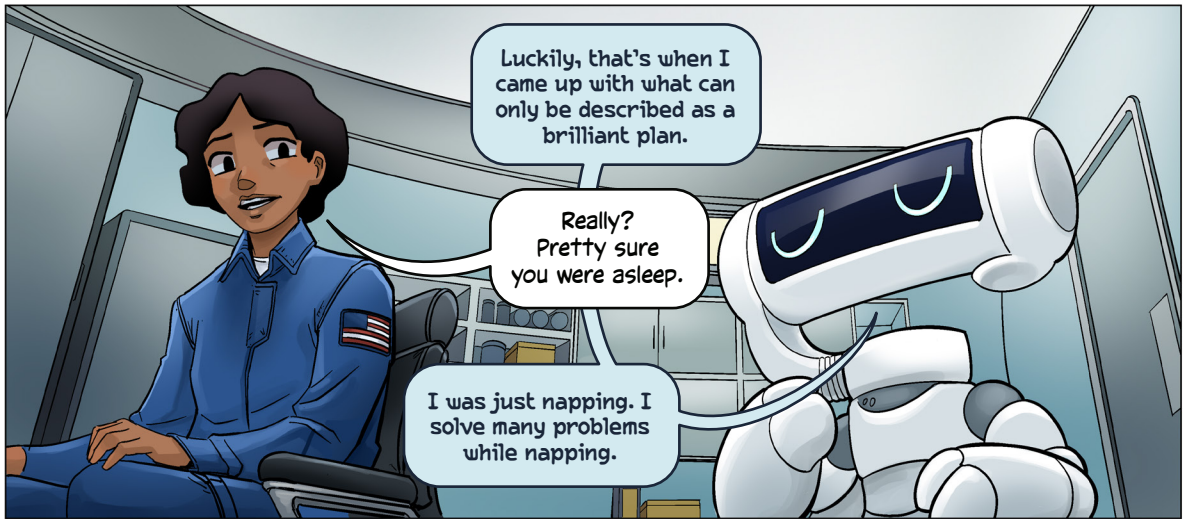
Copy that, Dan! Intercom's been restored! That must mean the solar flare has moved past us.



So maybe other equipment is coming back online too. If we could just get the winch going again...



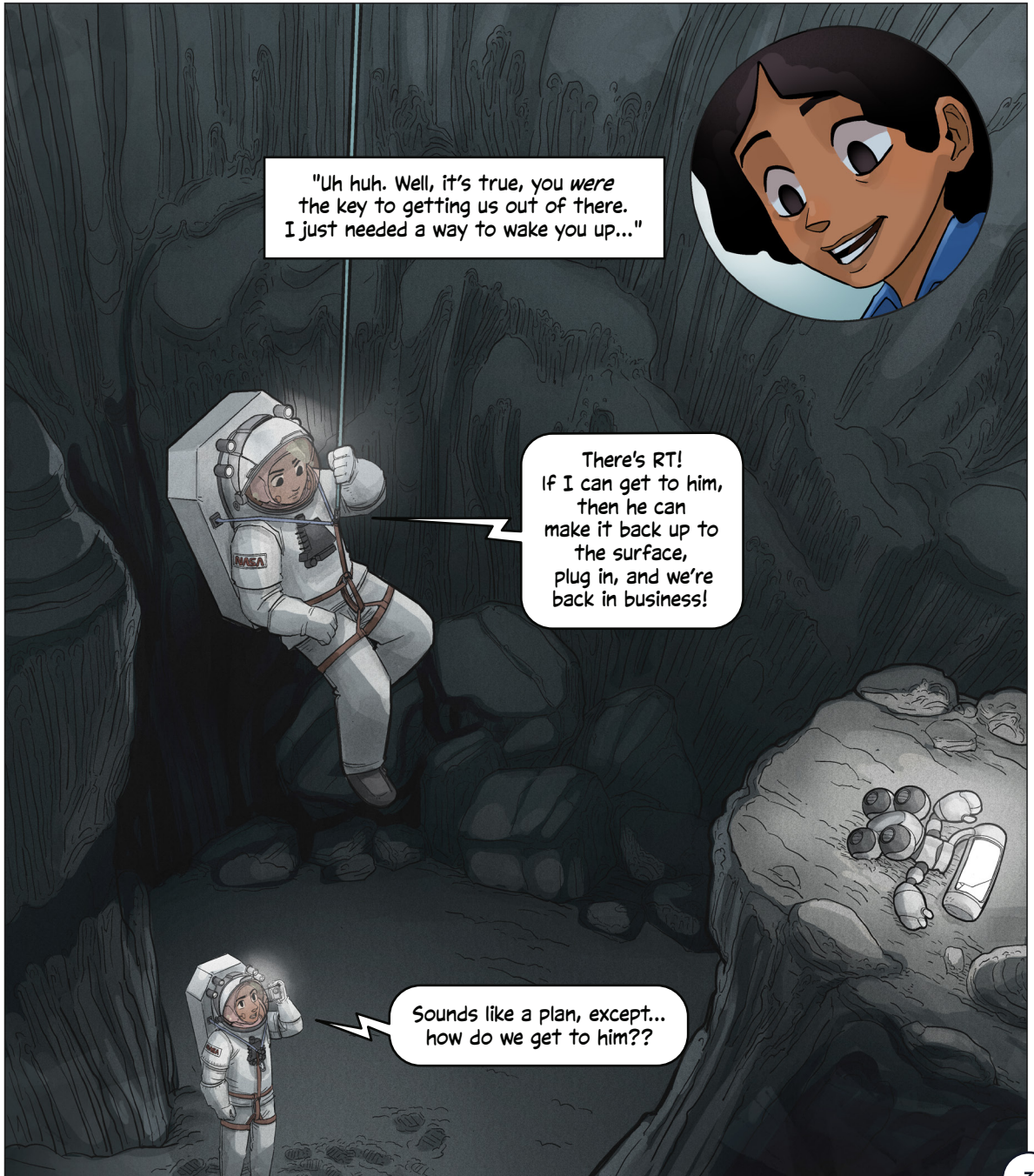
I still can't connect to the rover. We'll have to get it started manually.



Luckily, that's when I came up with what can only be described as a brilliant plan.

Really?
Pretty sure
you were asleep.

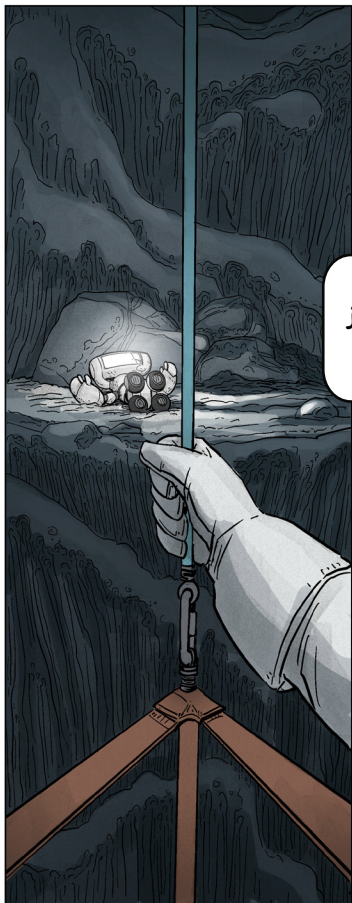
I was just napping. I
solve many problems
while napping.



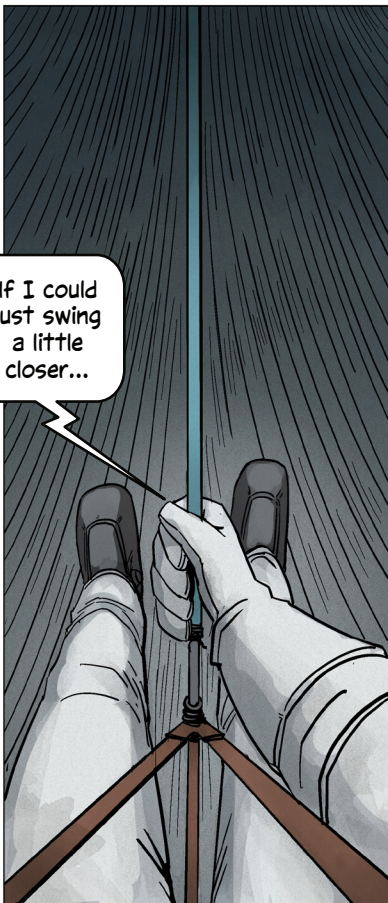
"Uh huh. Well, it's true, you *were*
the key to getting us out of there.
I just needed a way to wake you..."

There's RT!
If I can get to him,
then he can
make it back up to
the surface,
plug in, and we're
back in business!

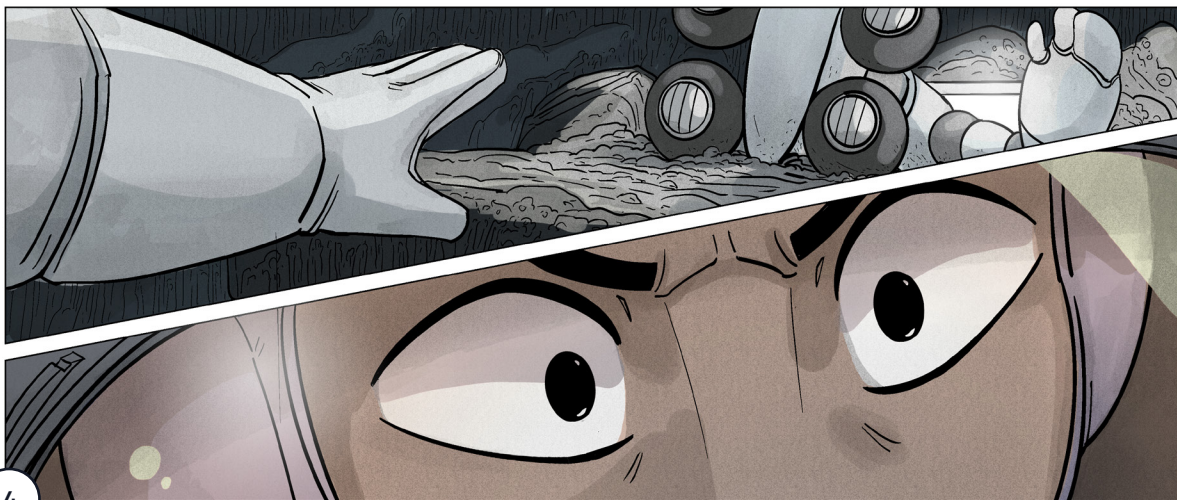
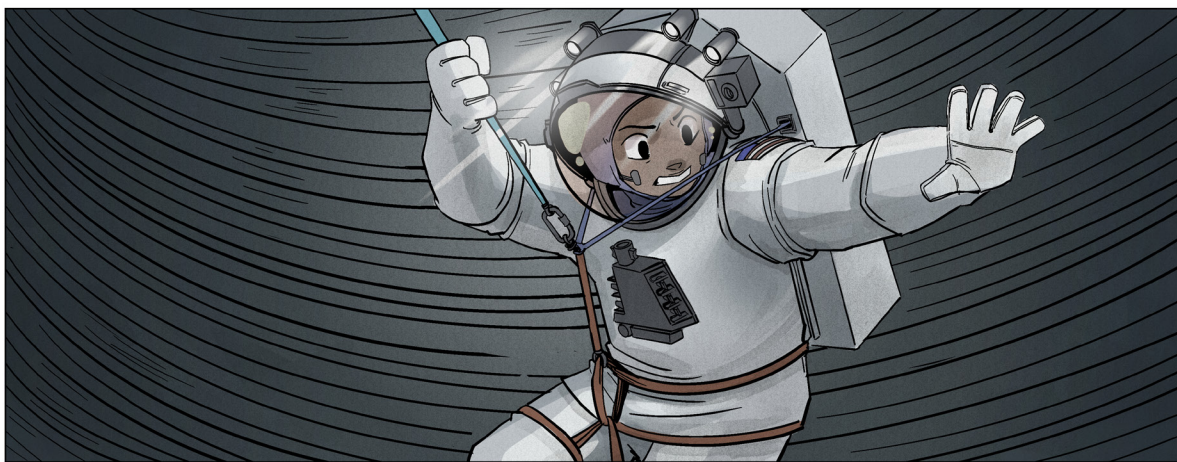
Sounds like a plan, except...
how do we get to him??

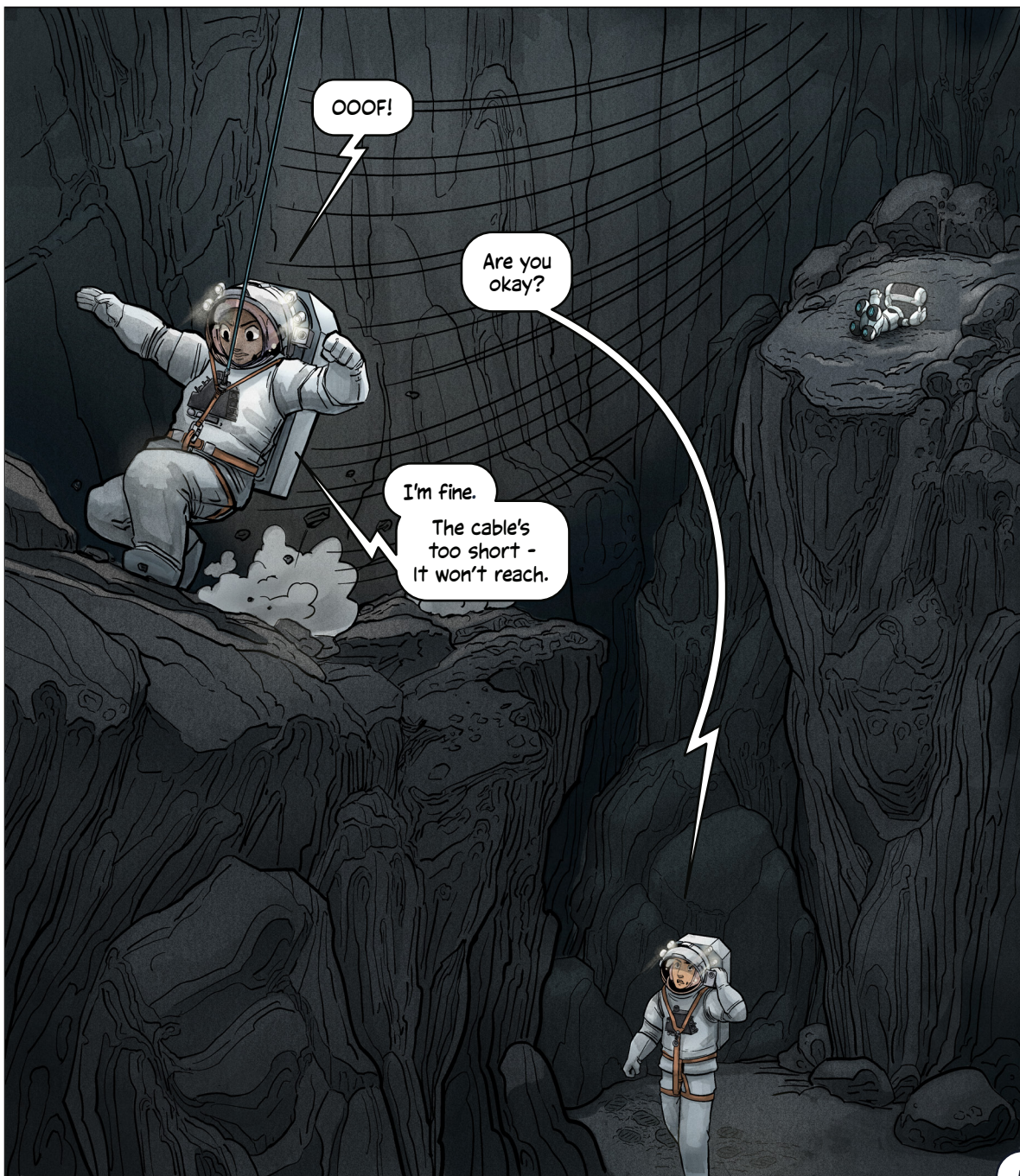
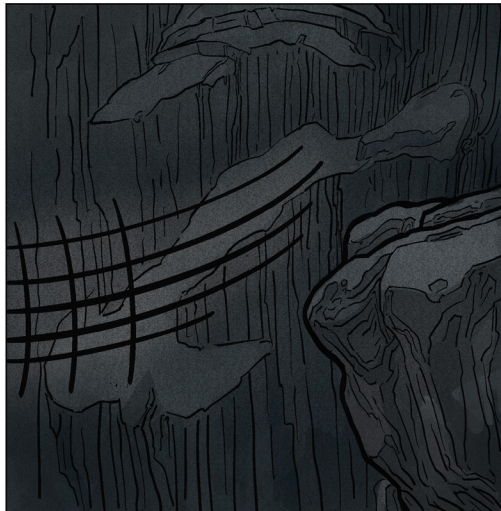


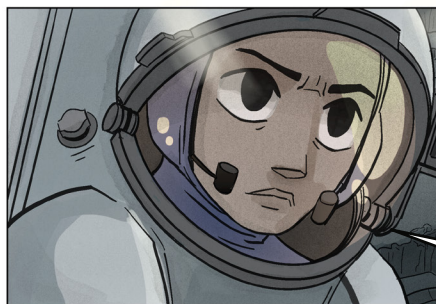
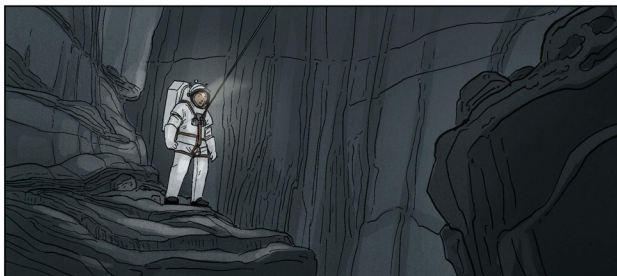
If I could
just swing
a little
closer...



Callie, you're
making me
nervous
right now.

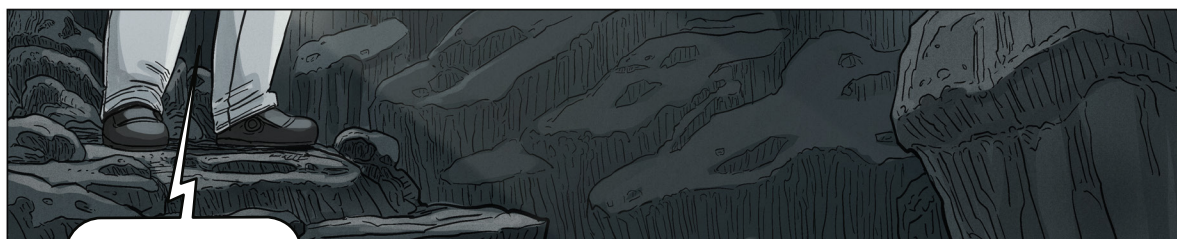
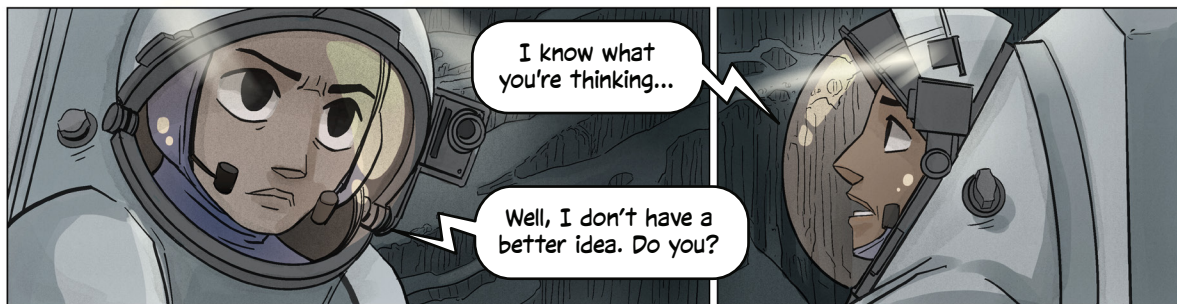




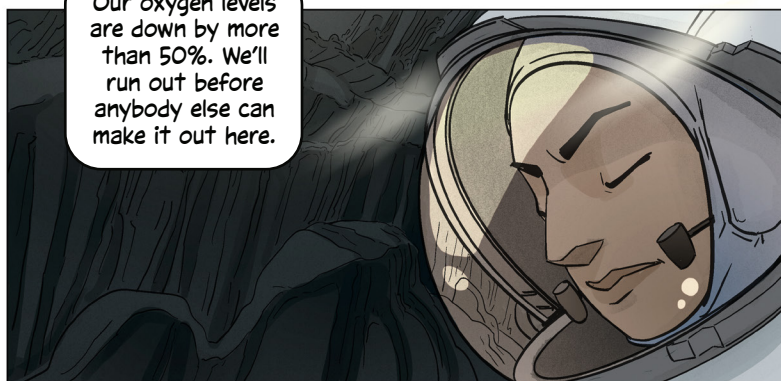


I know what you're thinking...

Well, I don't have a better idea. Do you?



Our oxygen levels are down by more than 50%. We'll run out before anybody else can make it out here.



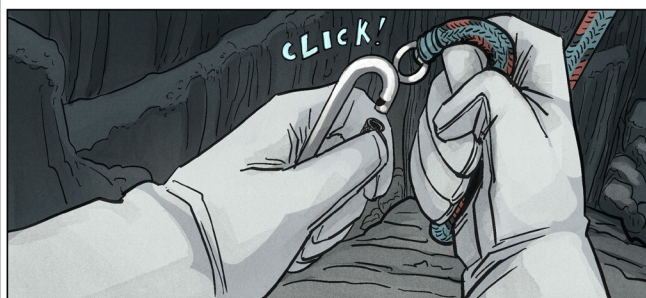
Alright.

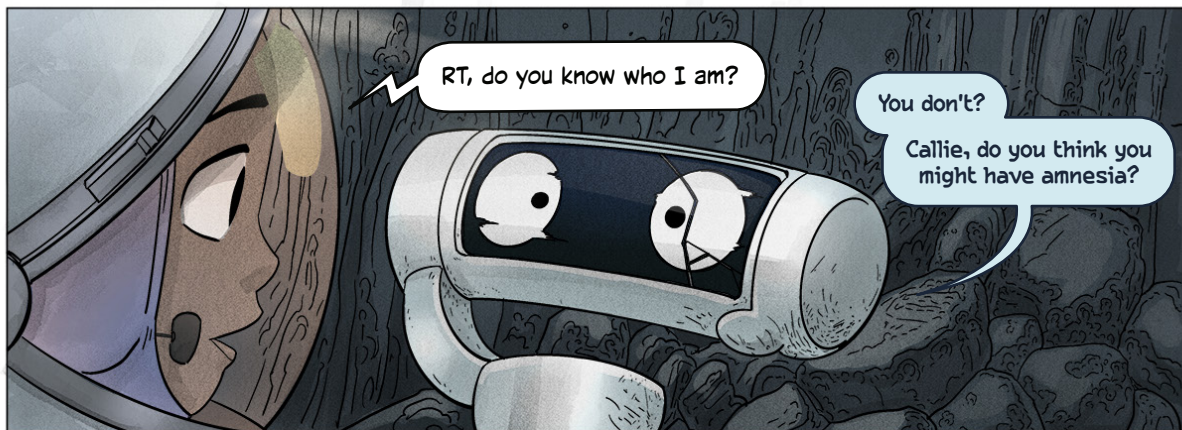
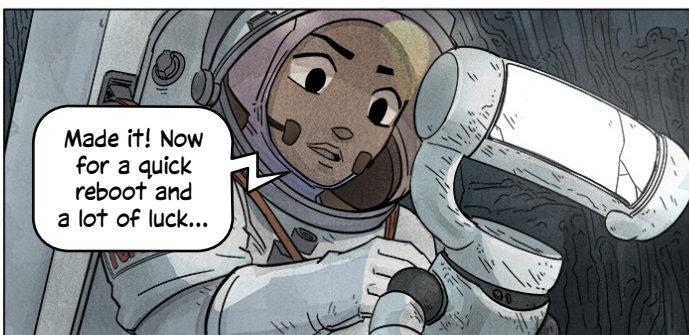


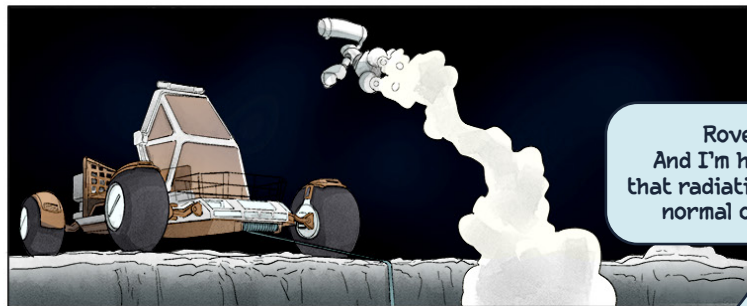
But let me at least get over there, so I'm under you. Just in case.



Okay. Ready.



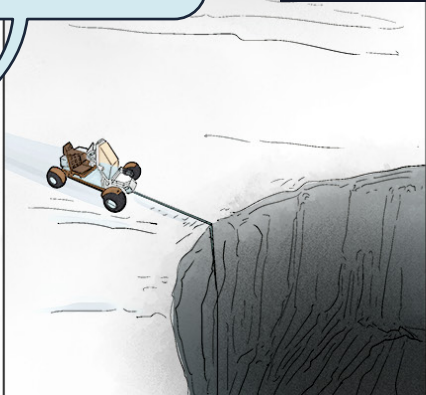
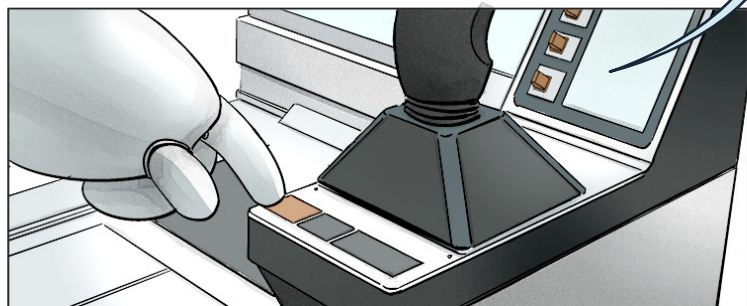




Rover started!
And I'm happy to report
that radiation levels are now
normal on the surface.



SPACE
WEATHER



Great, pick up
Dan first.

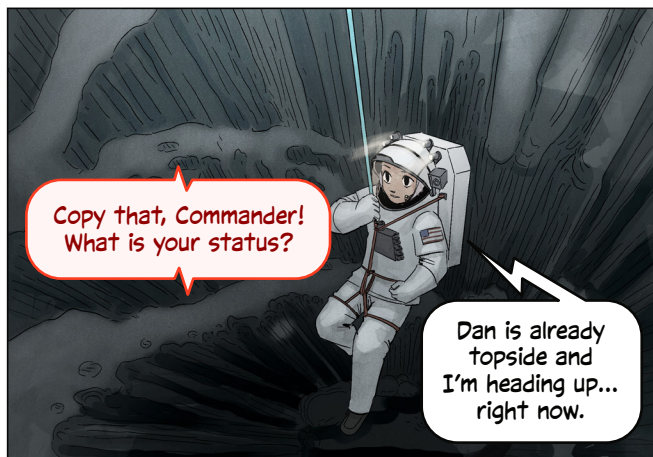
Then see if you can
reestablish comms
with Mission Control.



Okay Callie,
connection restored.



Mission Control,
do you copy?

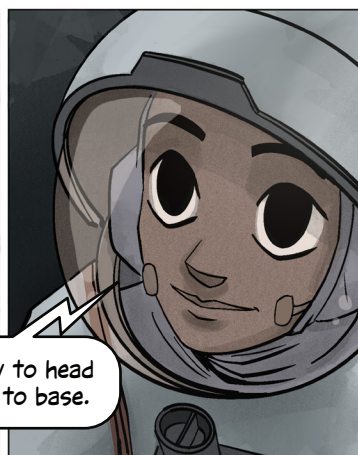


Copy that, Commander!
What is your status?

Dan is already
topside and
I'm heading up...
right now.



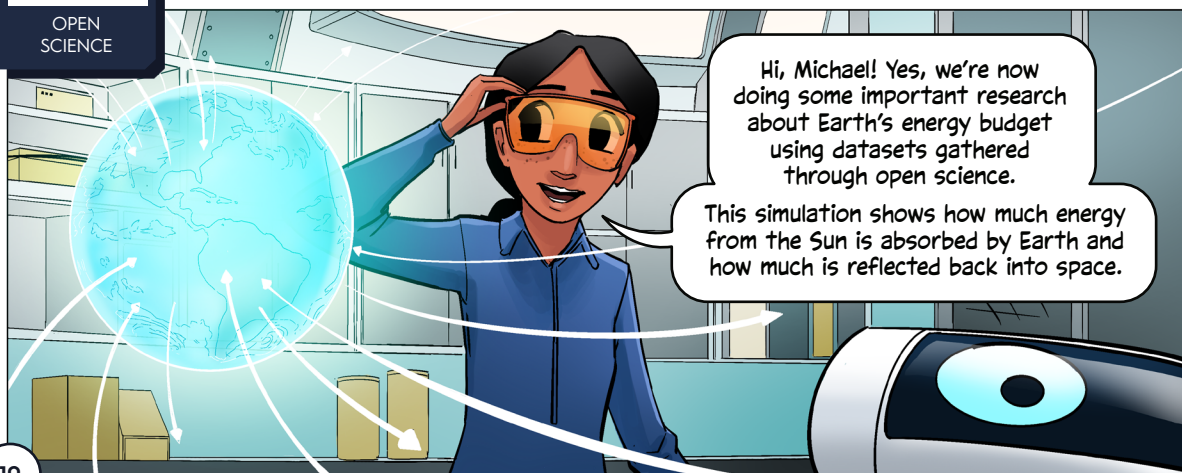
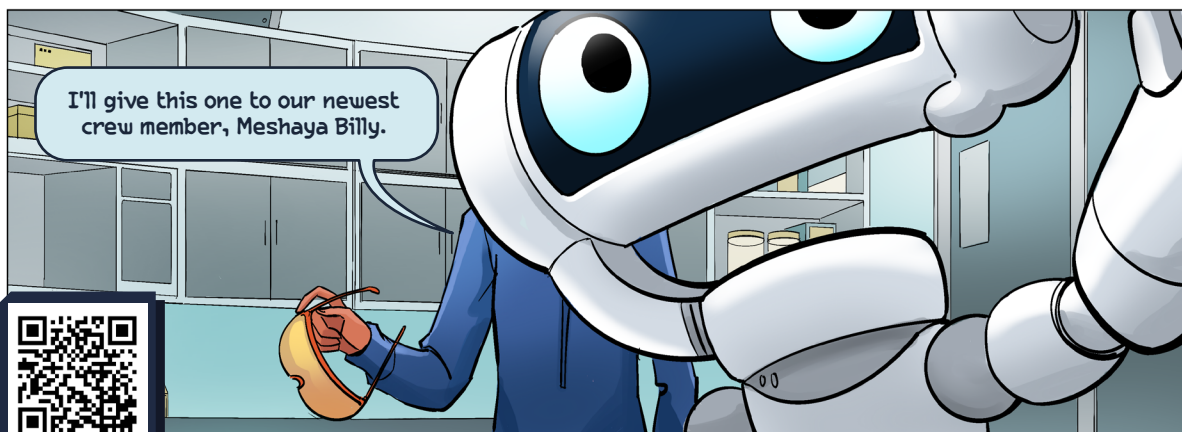
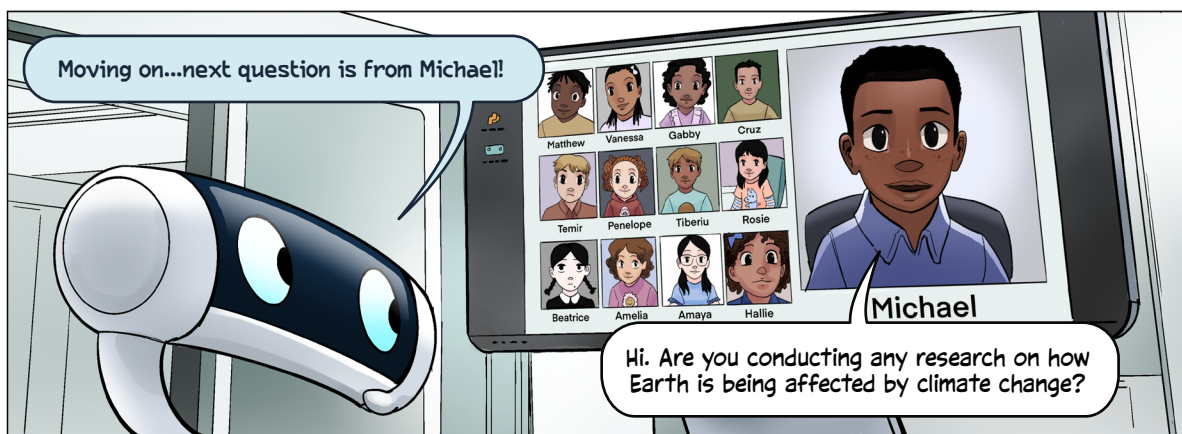
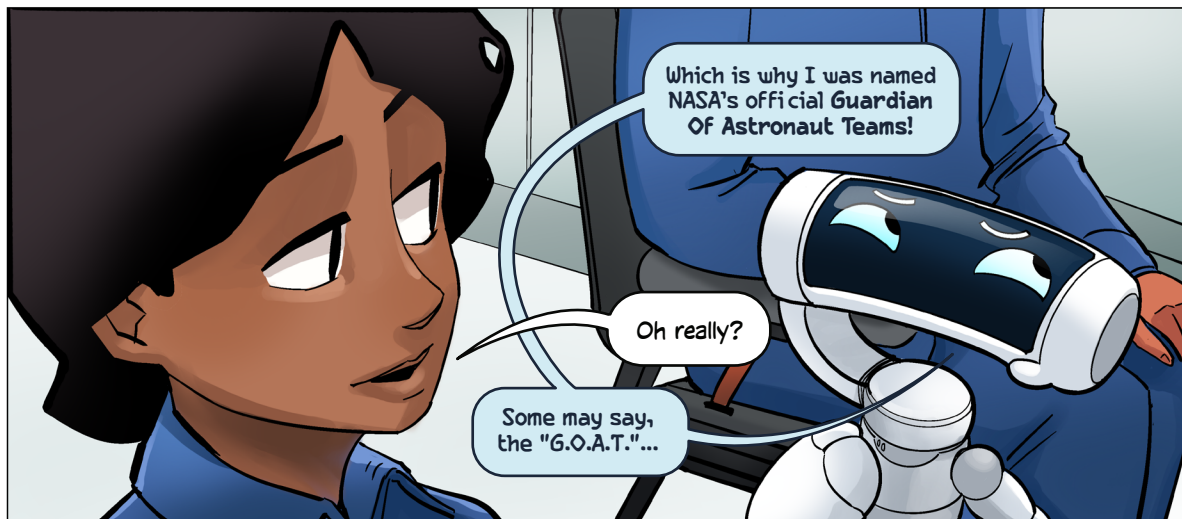
Mission Control,
we are all on the
surface now.

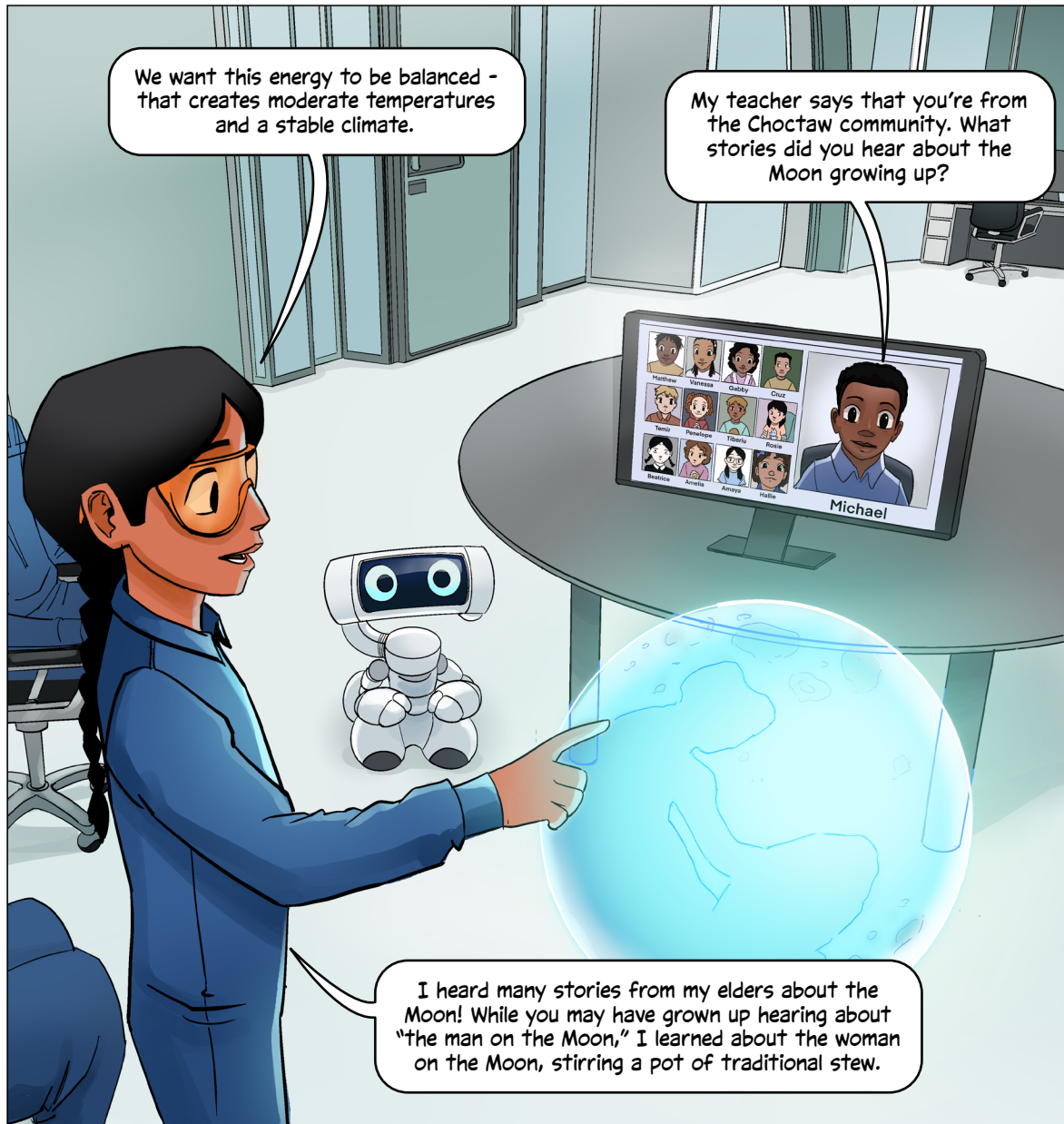


Ready to head
back to base.



"And that's how I single-handedly rescued Dan and Callie from the dark,
dangerous lava tunnel. Of course, the nation was deeply grateful."





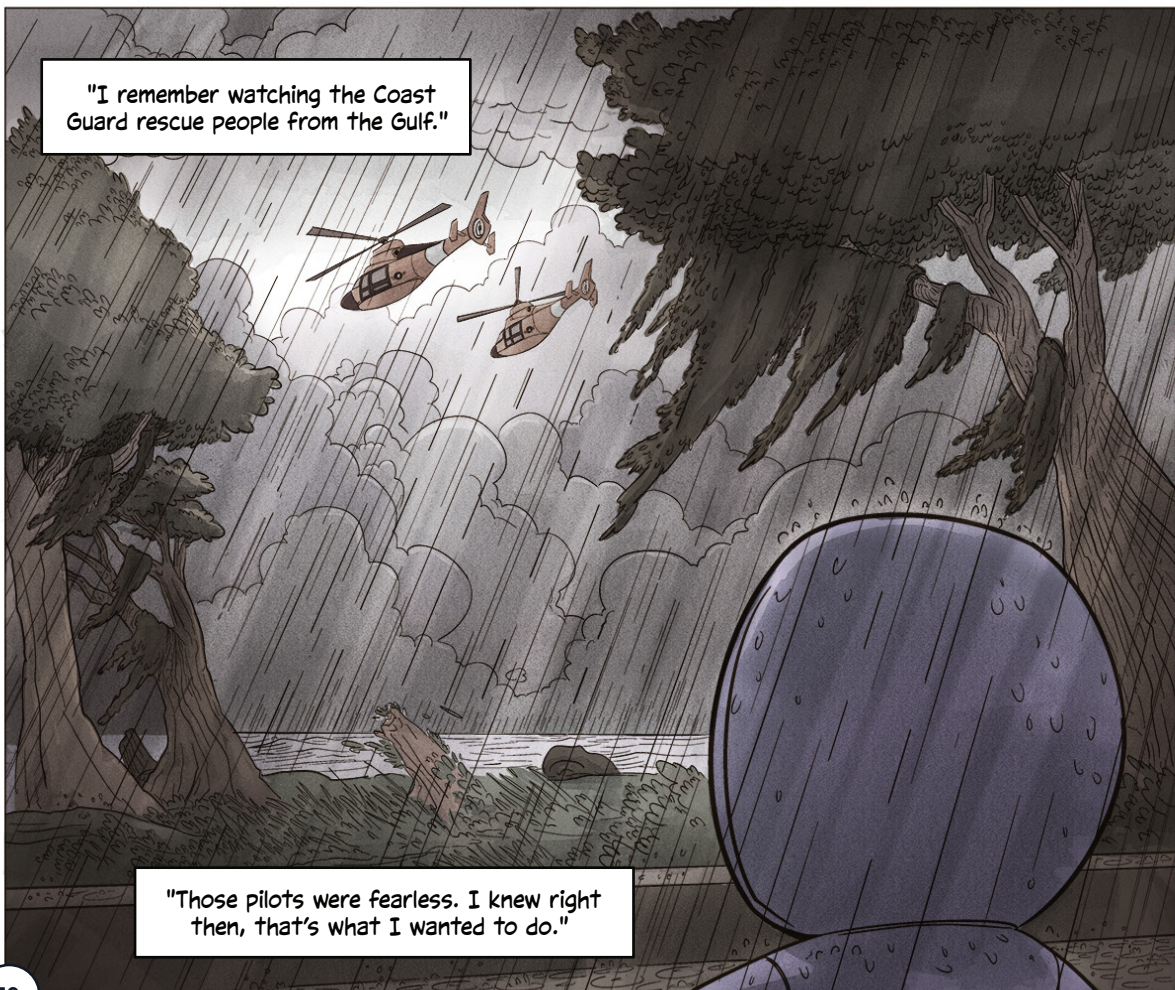


"Um, no. I wanted to be a helicopter pilot."

When I was little, we were visiting family in Louisiana during a really bad storm,"



"I remember watching the Coast Guard rescue people from the Gulf."



"Those pilots were fearless. I knew right then, that's what I wanted to do."

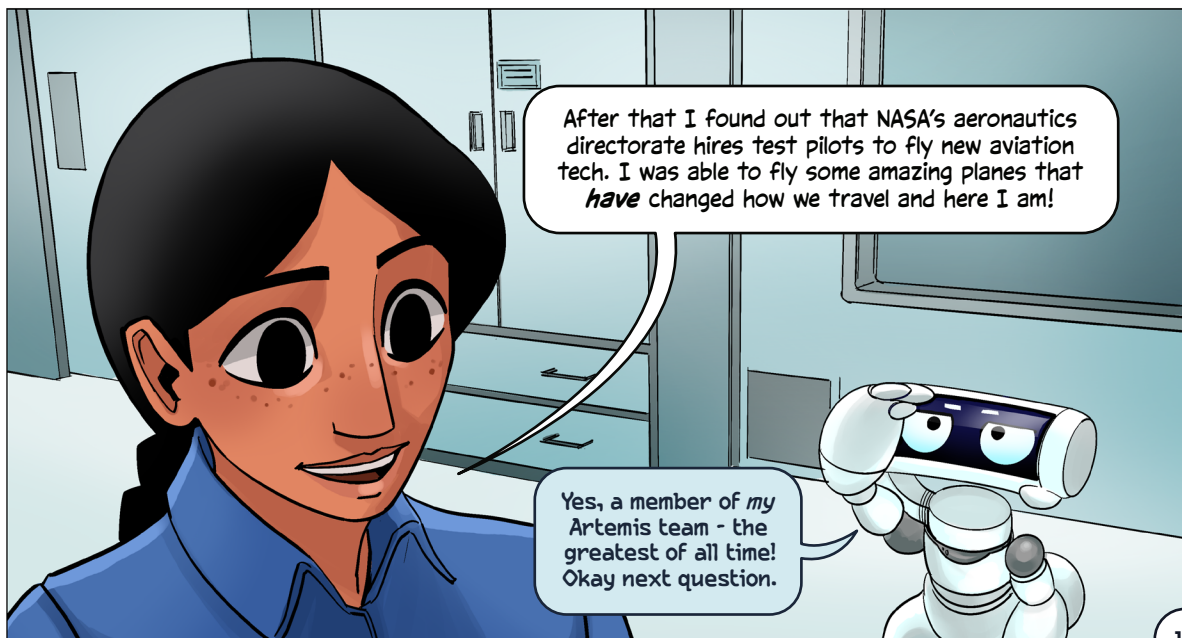


"I joined the Coast Guard, and did helicopter search and rescue for a few years."



"Kids, Meshaya's being a bit too modest."

Meshaya was awarded a medal for risking her own life to rescue the crew of a sinking freighter during a hurricane!"

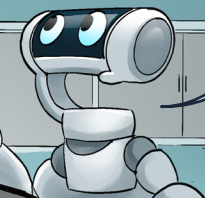


After that I found out that NASA's aeronautics directorate hires test pilots to fly new aviation tech. I was able to fly some amazing planes that *have* changed how we travel and here I am!

Yes, a member of my Artemis team - the greatest of all time! Okay next question.



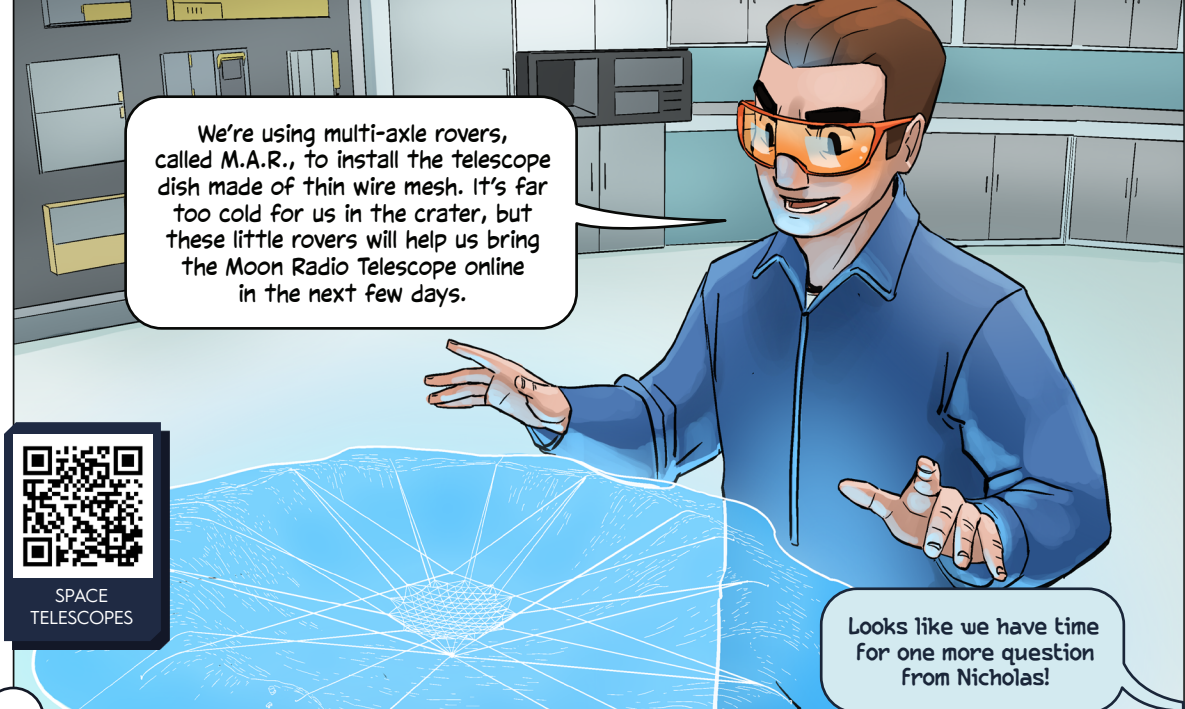
Is NASA doing any projects with astronauts from other countries?



Oh, let's have Martin take this one! He's an astrophysicist visiting from the Canadian Space Agency.



Yes! We are working with NASA to finish construction on the next great observatory in space to enable more shared data and open science collaboration from scientists around the world.

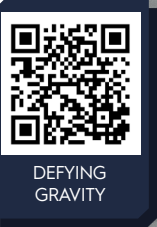
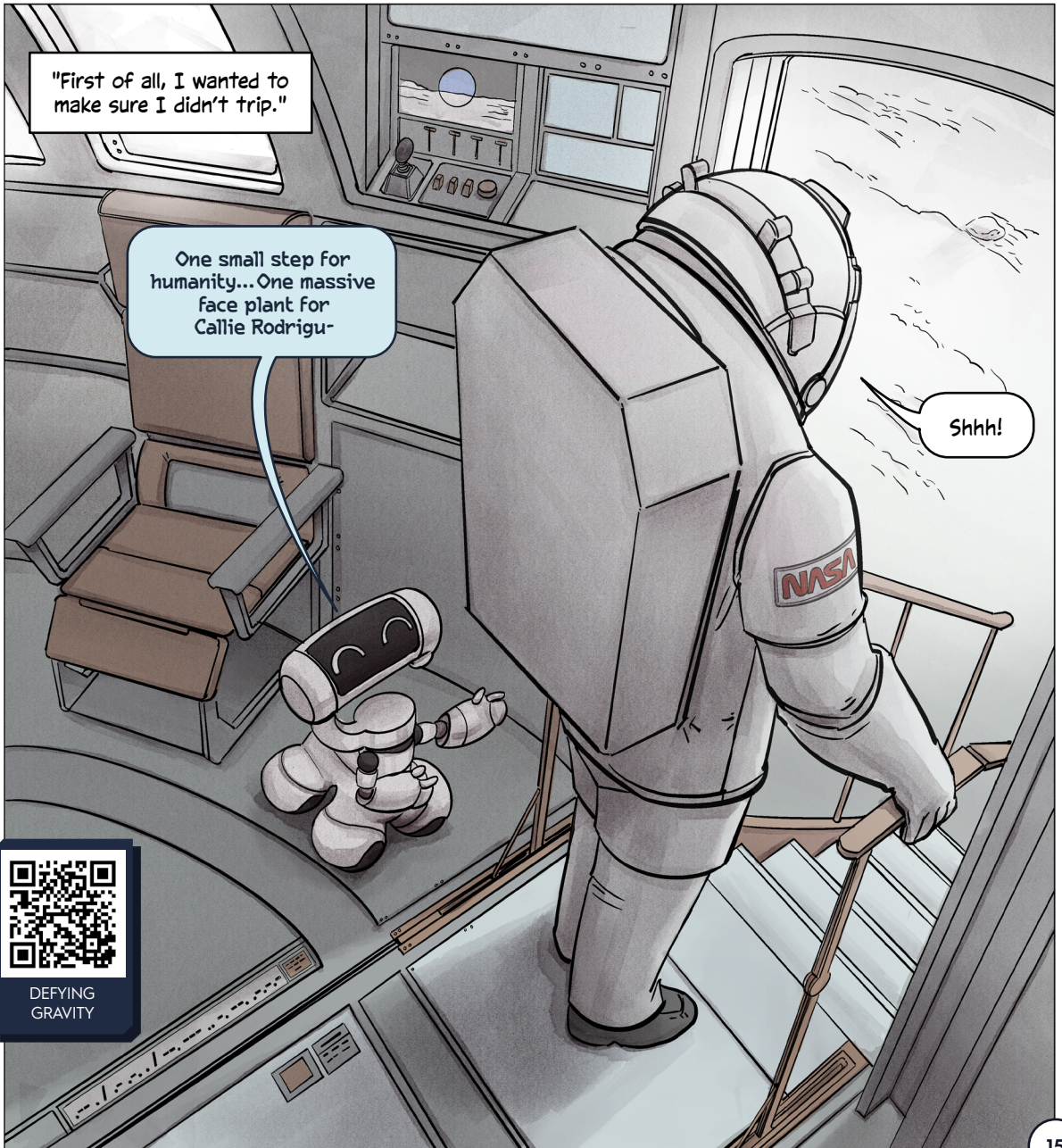
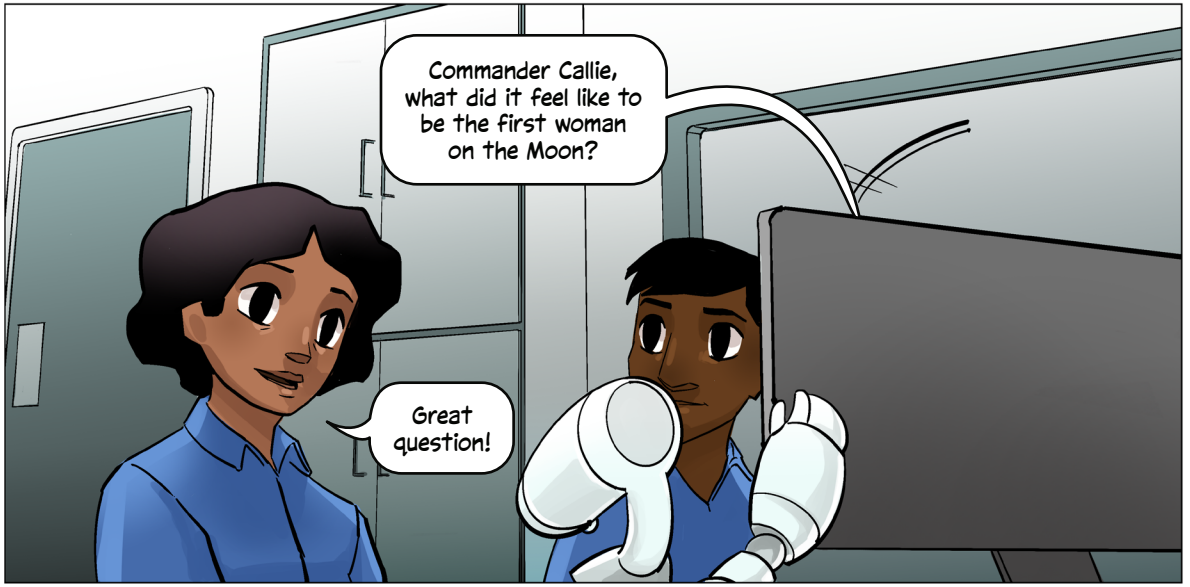


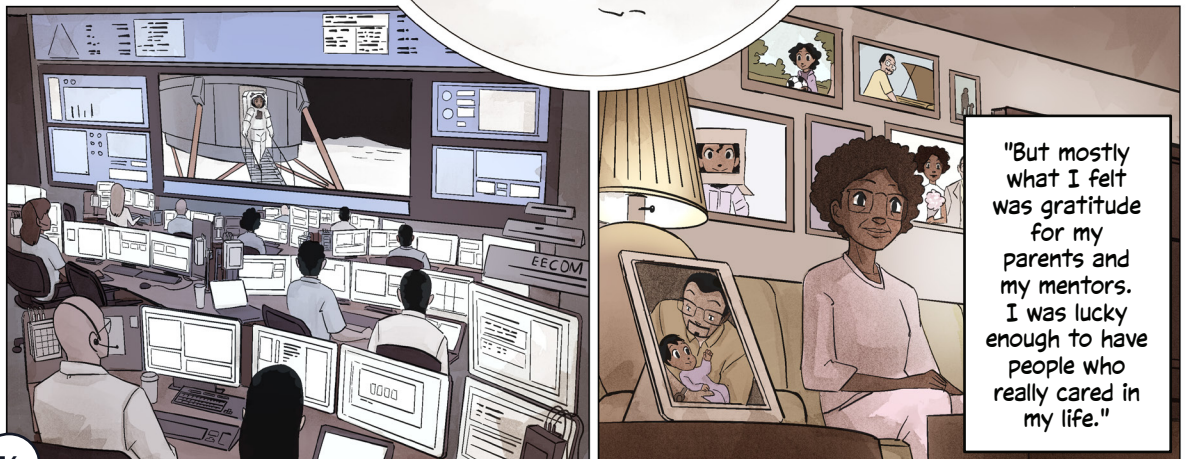
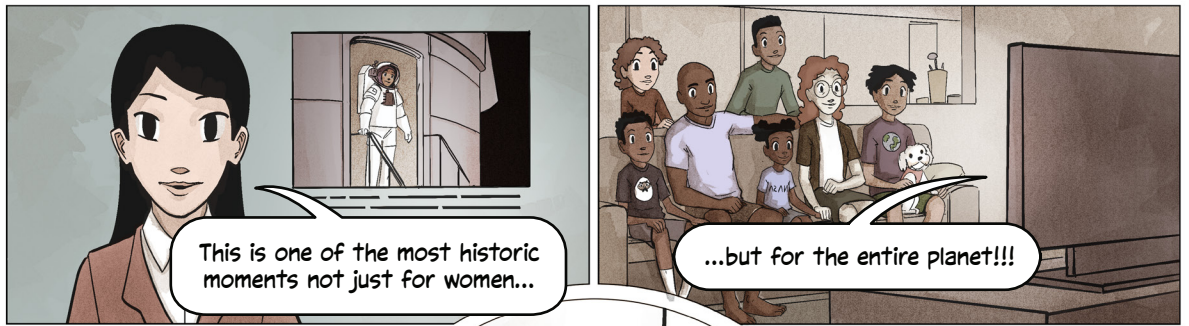
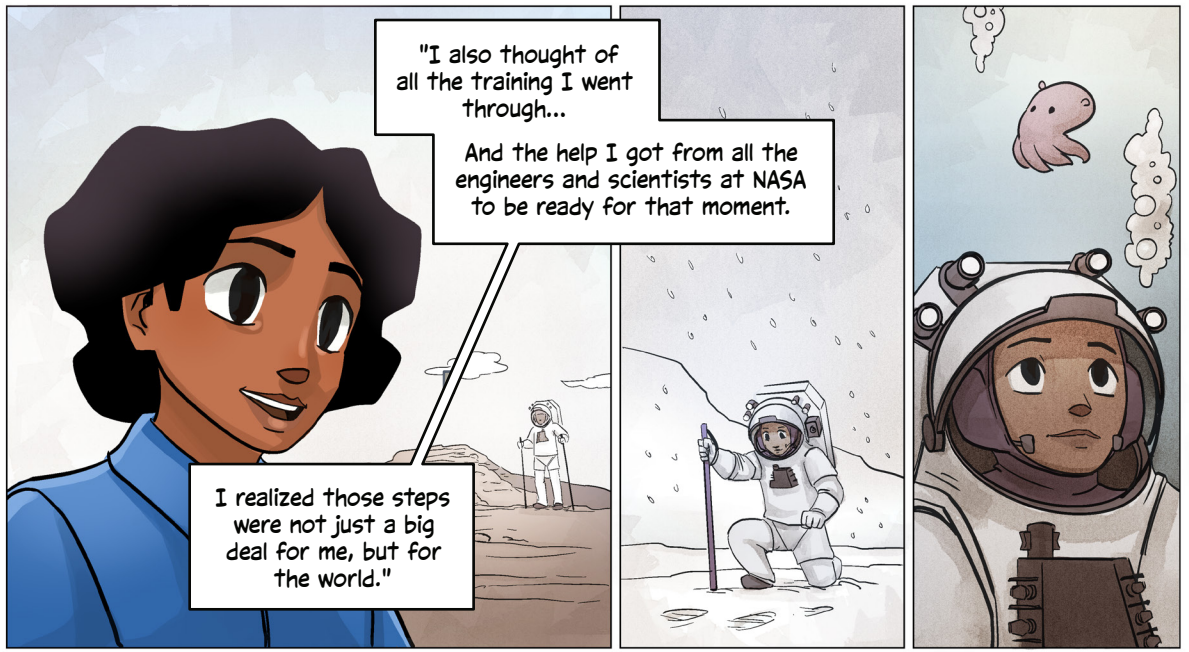
We're using multi-axis rovers, called M.A.R., to install the telescope dish made of thin wire mesh. It's far too cold for us in the crater, but these little rovers will help us bring the Moon Radio Telescope online in the next few days.

Looks like we have time for one more question from Nicholas!



SPACE
TELESCOPES







So if you have a dream, stick with it.
Don't be afraid to ask for help.
Questions will lead you to finding that
person who can support you.

If not a parent, maybe it's a
coach, teacher, or a neighbor.
They're out there.



BUBBLES
IN SPACE



Okay, we're about
out of time. Th-



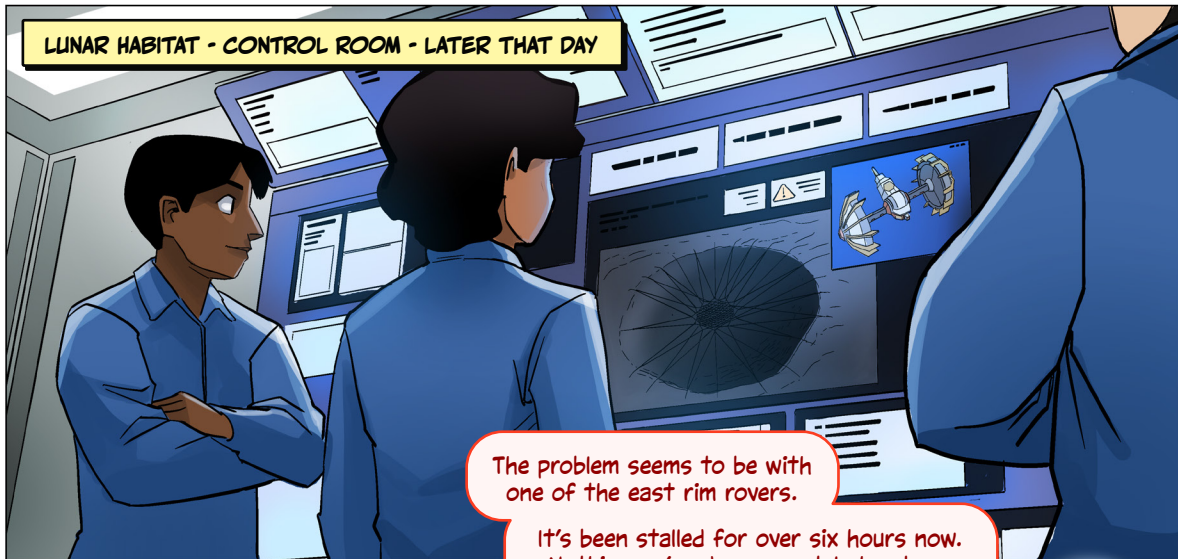
Why, of course I can
show you kids a video of
a water bubble blowing
contest on the Outpost!

What? RT, no one
gave you that prompt!



Anyway, looks like we
have a mission briefing
coming up. Thanks
everyone! Bye!

LUNAR HABITAT - CONTROL ROOM - LATER THAT DAY



The problem seems to be with one of the east rim rovers.

It's been stalled for over six hours now. Nothing we've done remotely has been successful to get it moving again.

MISSION CONTROL - EARTH



Do we have any idea why it stopped?

Not yet, we need eyes on the site ASAP.

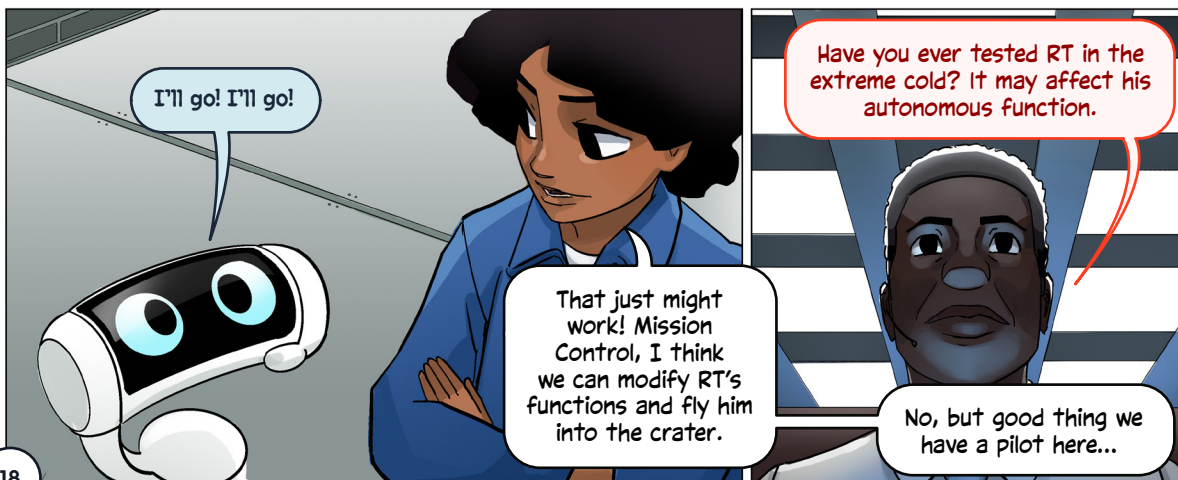


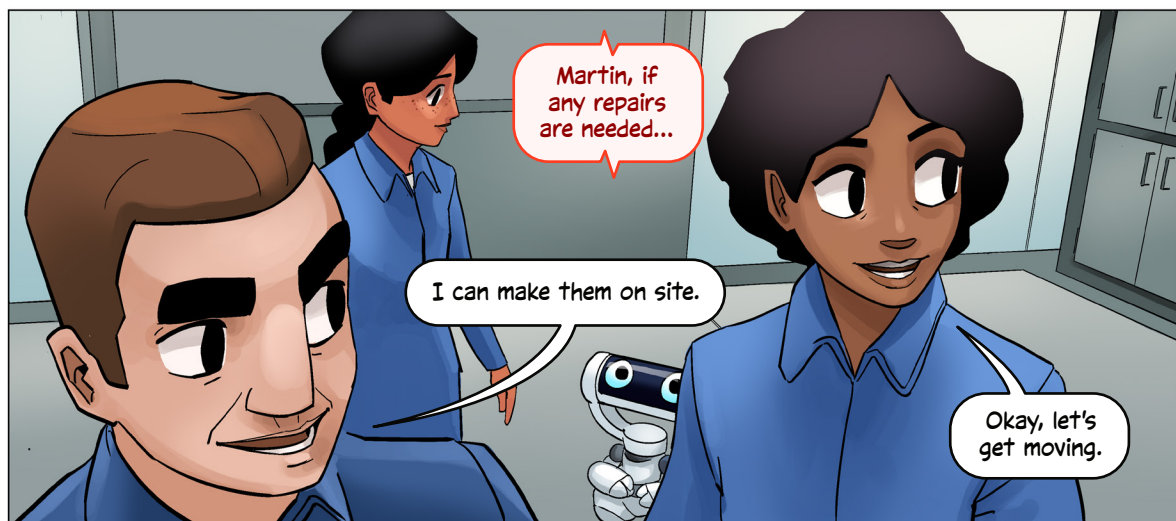
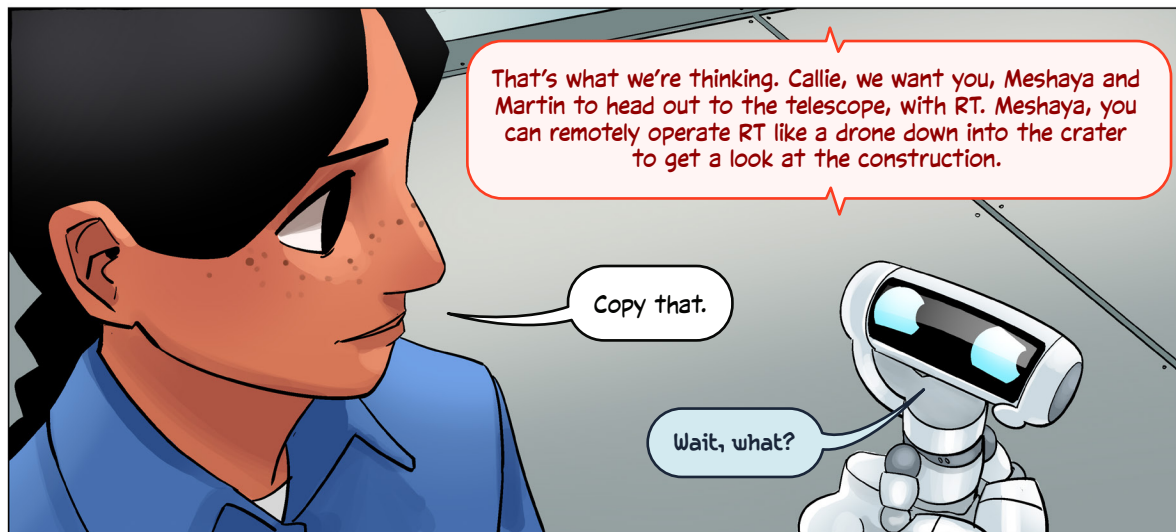
I'll go! I'll go!

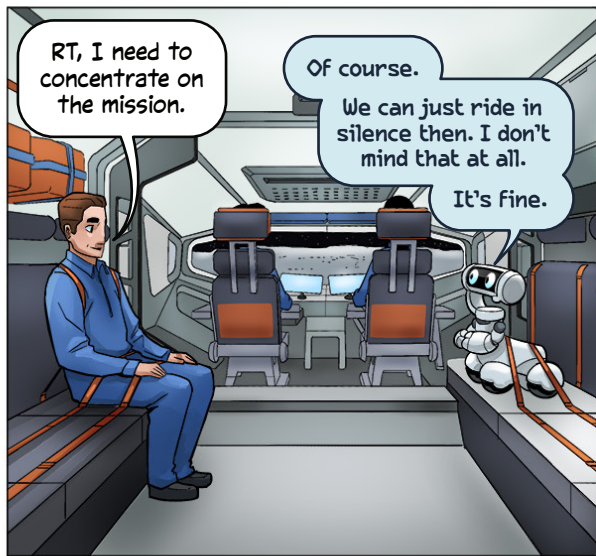
That just might work! Mission Control, I think we can modify RT's functions and fly him into the crater.

Have you ever tested RT in the extreme cold? It may affect his autonomous function.

No, but good thing we have a pilot here...





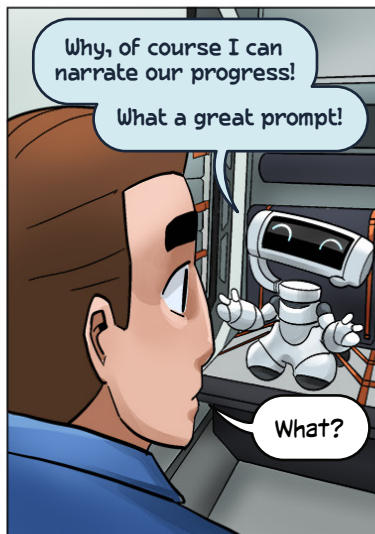
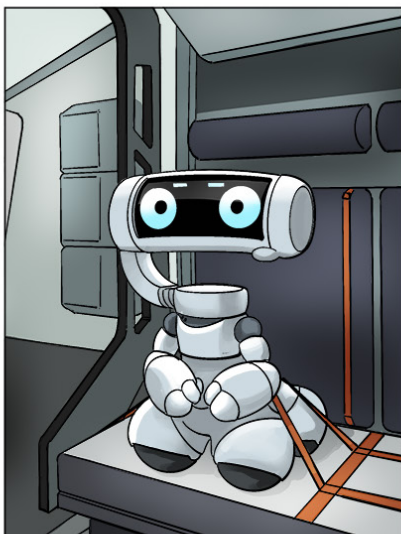
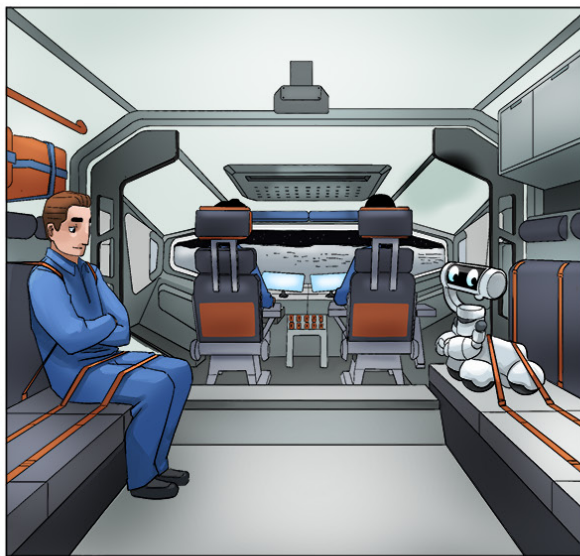


RT, I need to concentrate on the mission.

Of course.

We can just ride in silence then. I don't mind that at all.

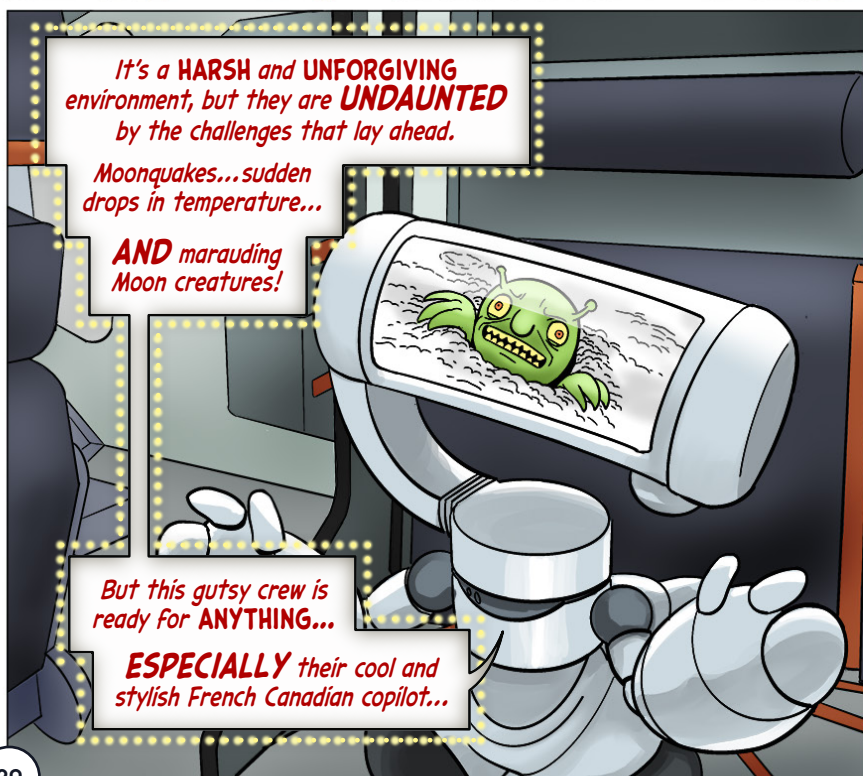
It's fine.



Why, of course I can narrate our progress!

What a great prompt!

What?



*It's a **HARSH** and **UNFORGIVING** environment, but they are **UNDAUNTED** by the challenges that lay ahead.*

Moonquakes... sudden drops in temperature...

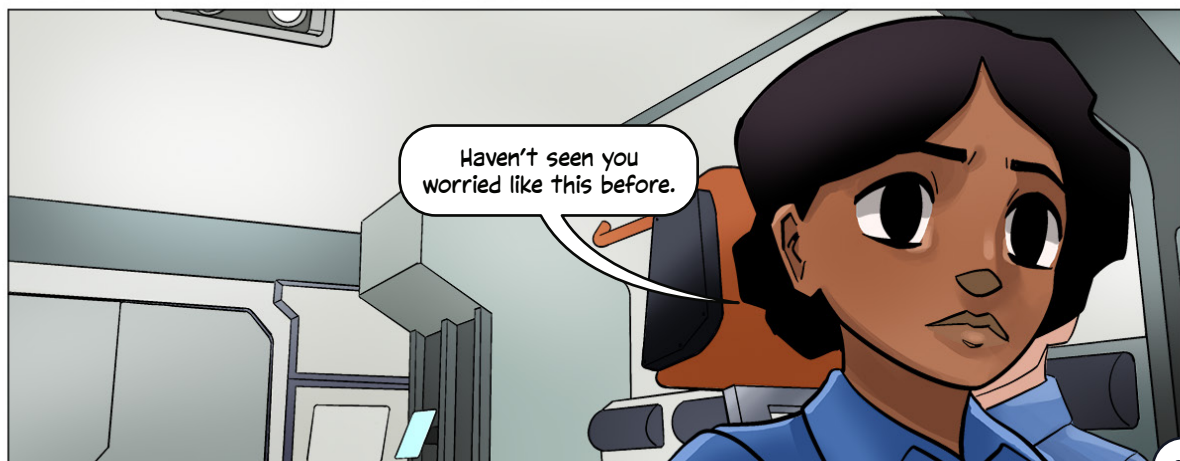
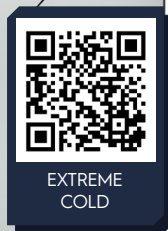
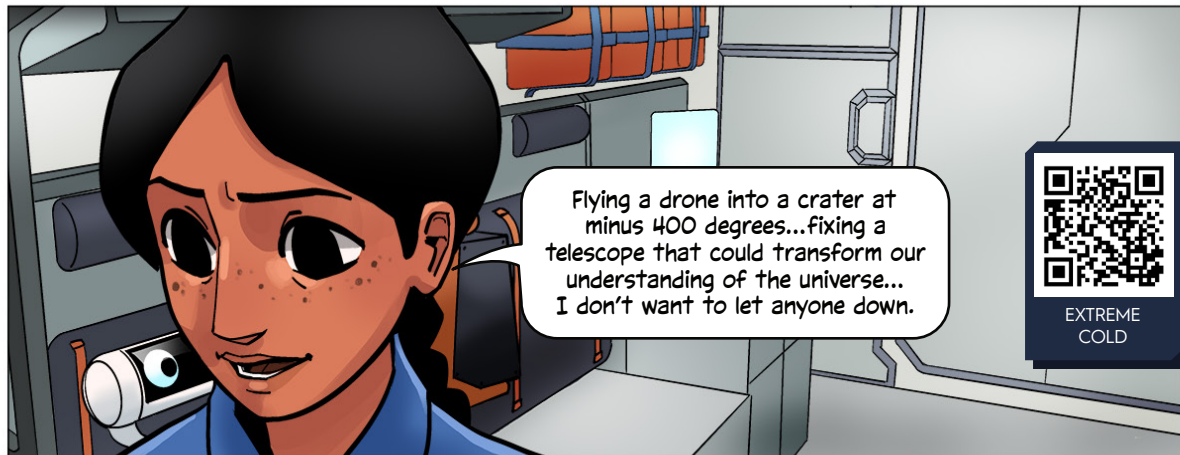
***AND** marauding Moon creatures!*

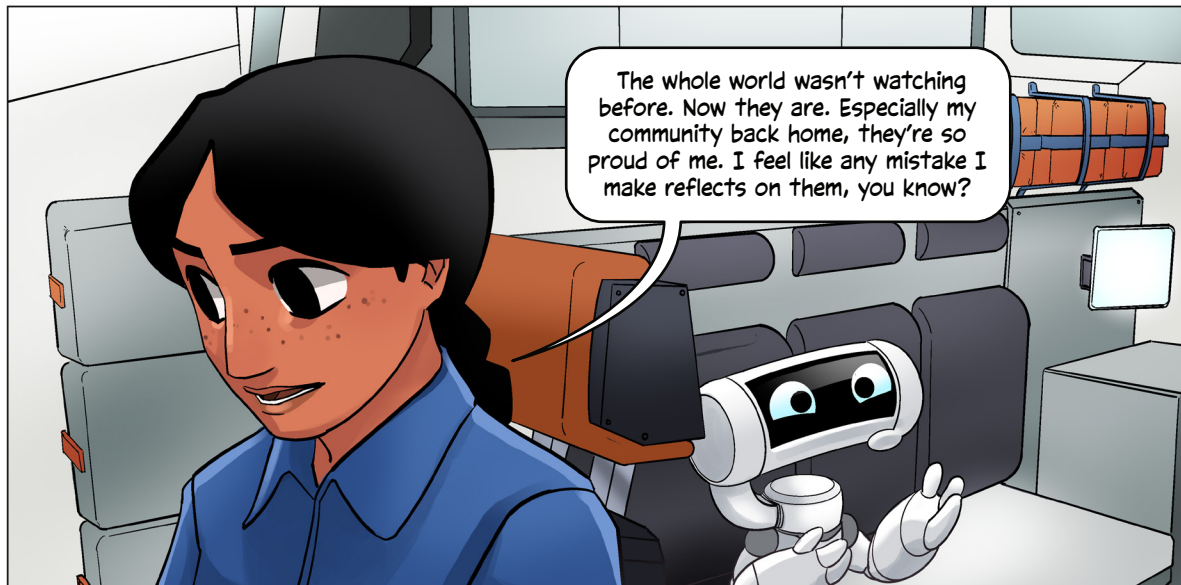
*But this gutsy crew is ready for **ANYTHING**...*

***ESPECIALLY** their cool and stylish French Canadian copilot...*



RT has a new friend.





The whole world wasn't watching before. Now they are. Especially my community back home, they're so proud of me. I feel like any mistake I make reflects on them, you know?



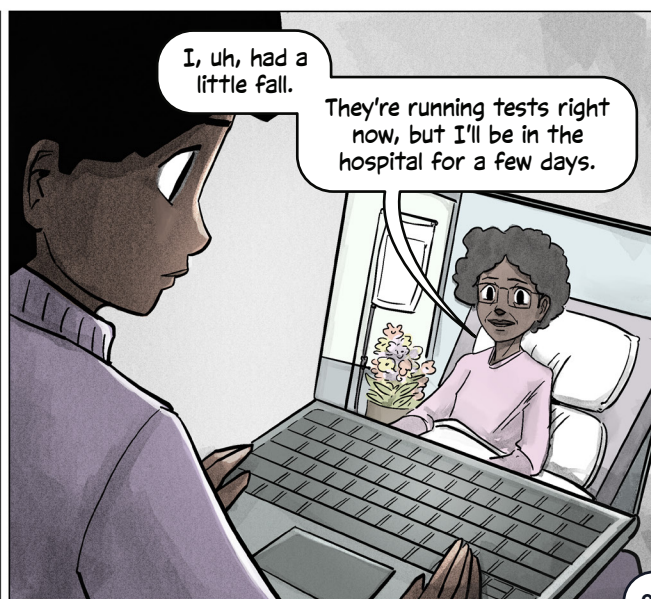
Oh, I might know something about carrying a lot of people's expectations on my shoulders, yeah.

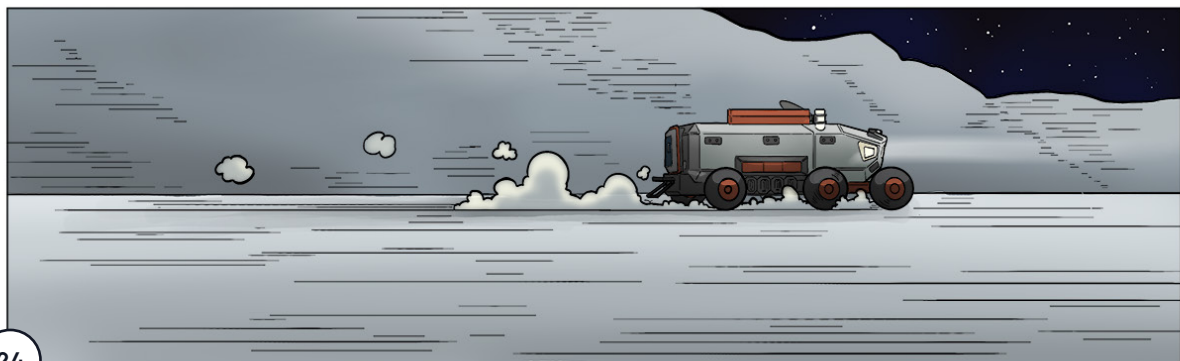
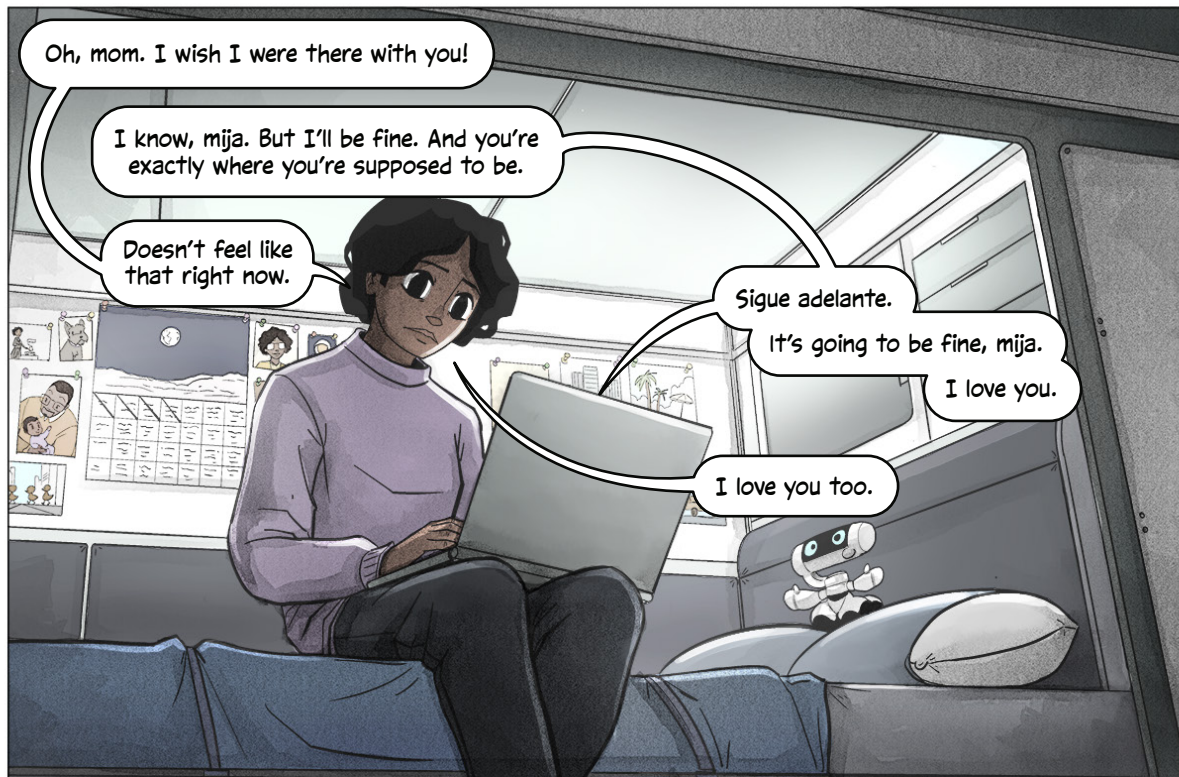
Right. Guess you would.

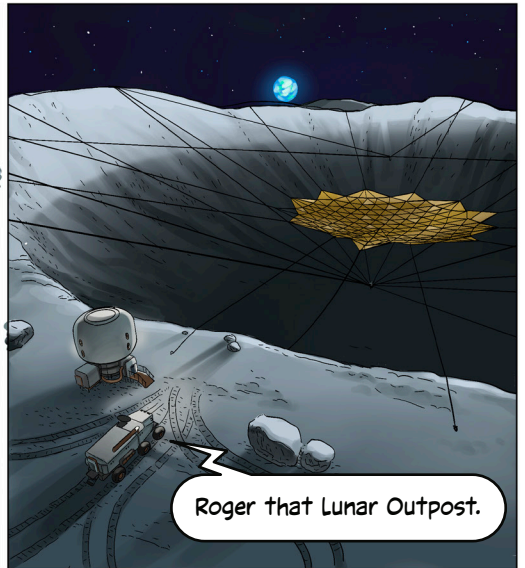
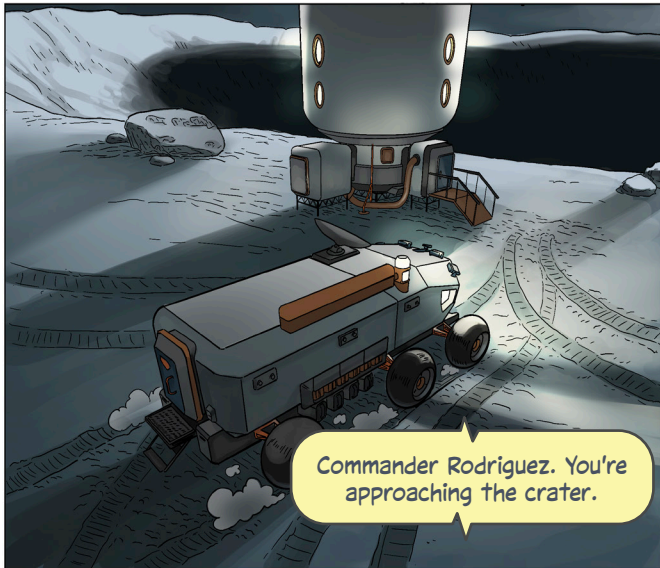


Look, there are millions of people who think you're a hero. But there are always going to be people who don't. You can't let that get in your head, any of it. *You* have to know you're good at what you do.

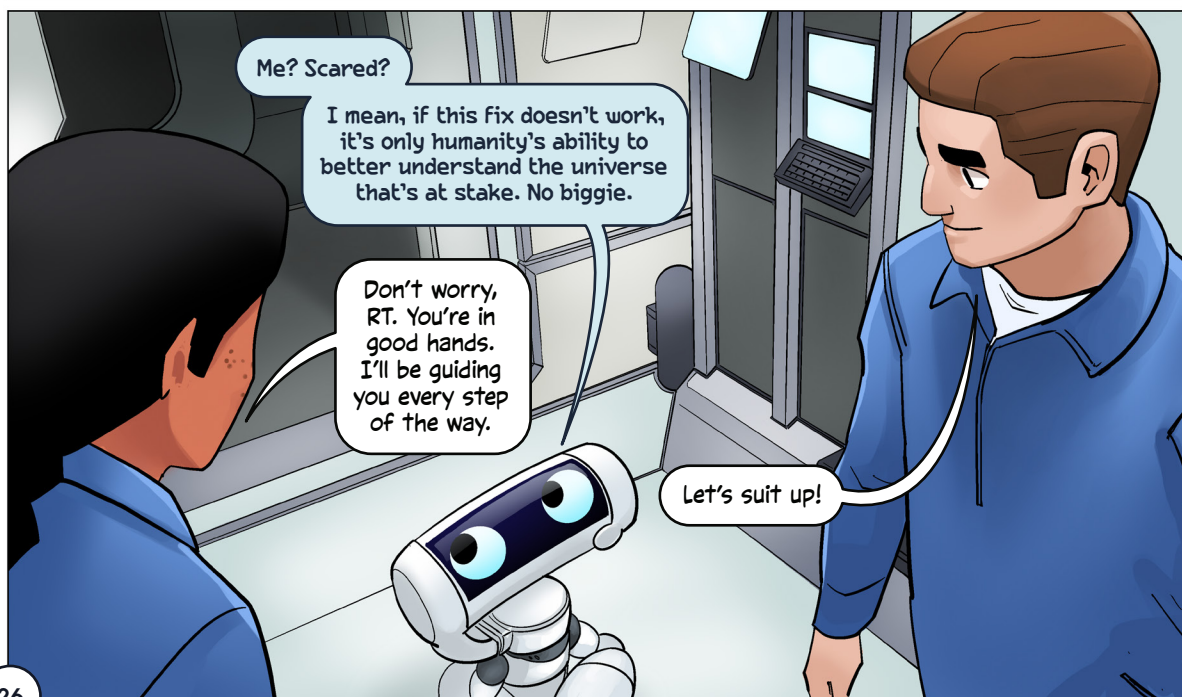
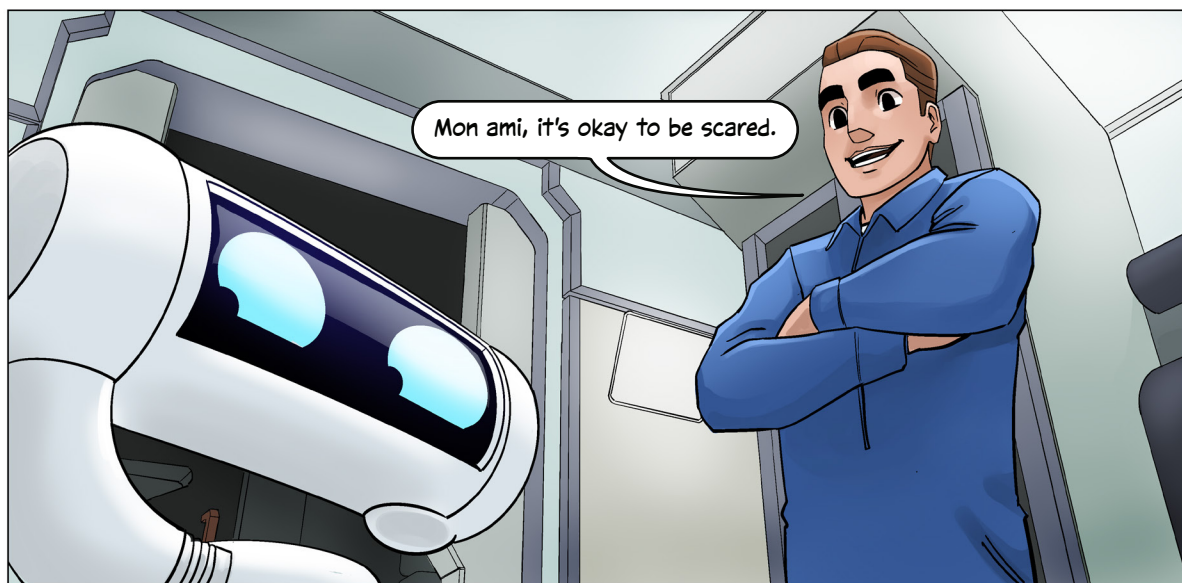
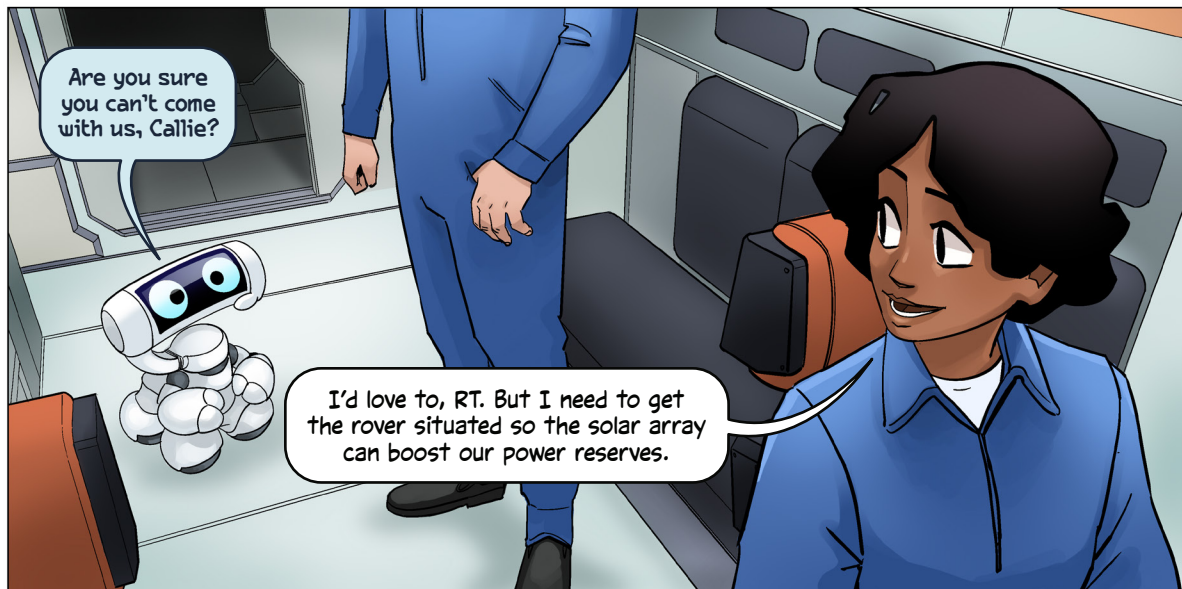
Because there may come a time, doing this, when it's just you. When you have to make a decision, and there's no one to guide you, you're going to have to trust ***your*** choices.





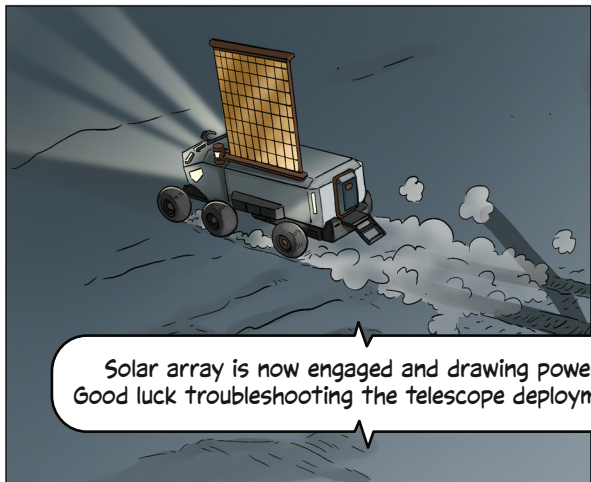


VISIT
THE TELESCOPE

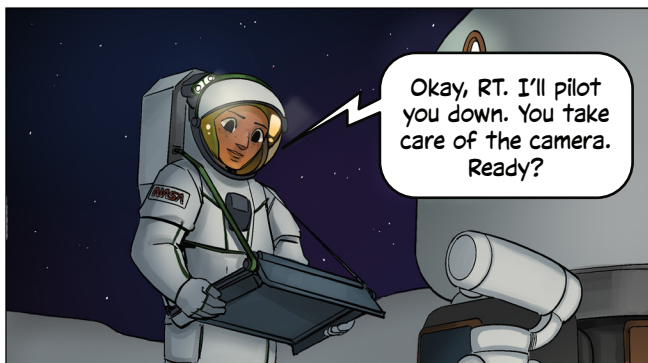
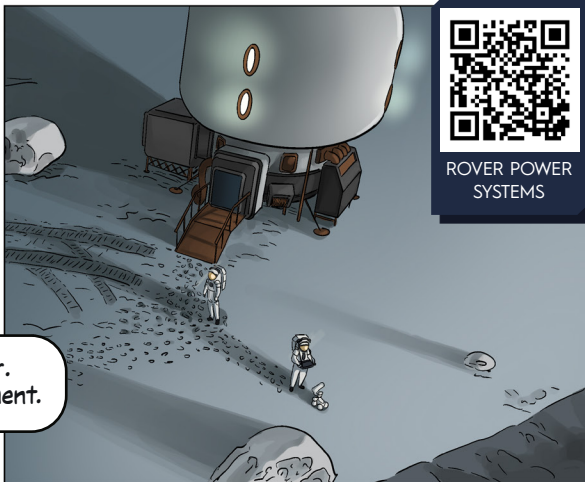




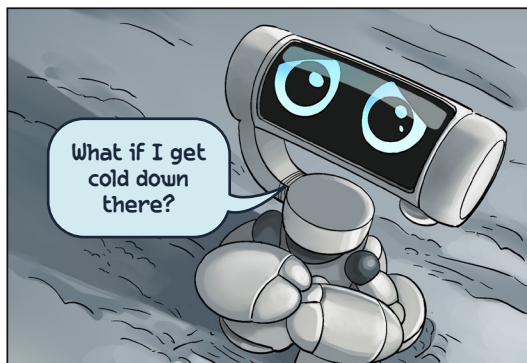
ROVER POWER
SYSTEMS



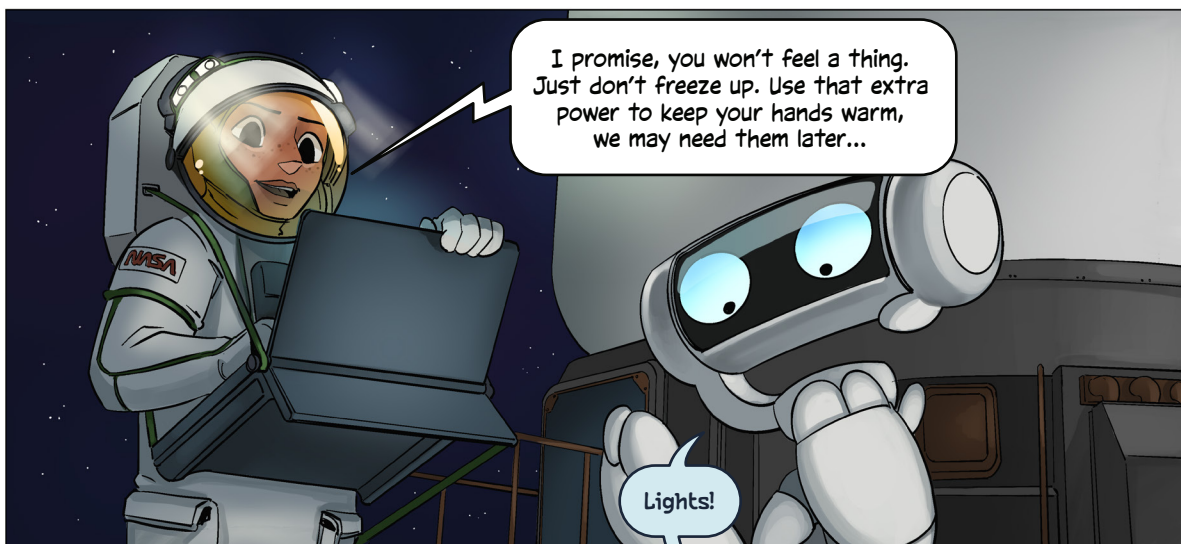
Solar array is now engaged and drawing power.
Good luck troubleshooting the telescope deployment.



Okay, RT. I'll pilot
you down. You take
care of the camera.
Ready?



What if I get
cold down
there?



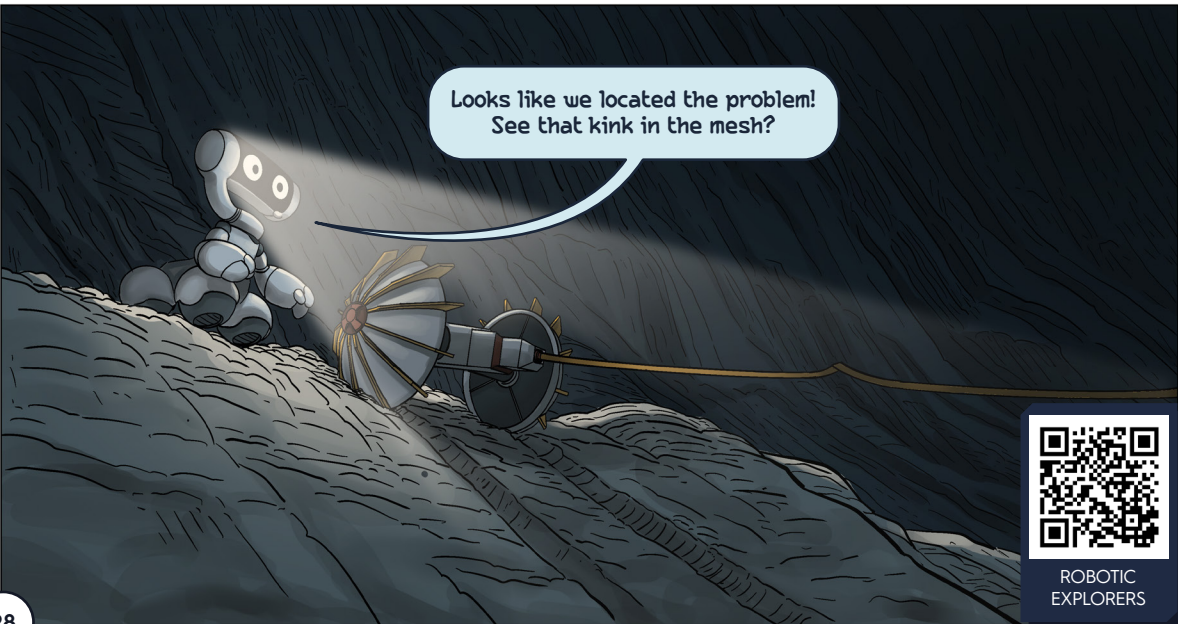
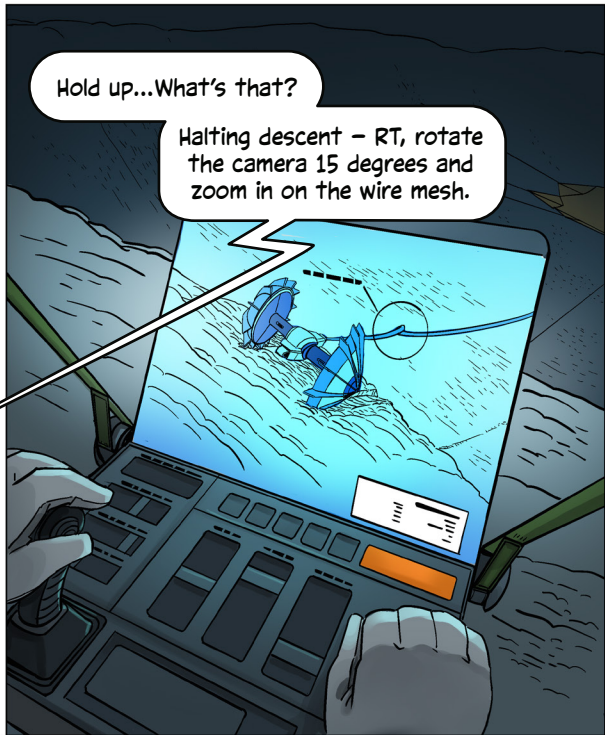
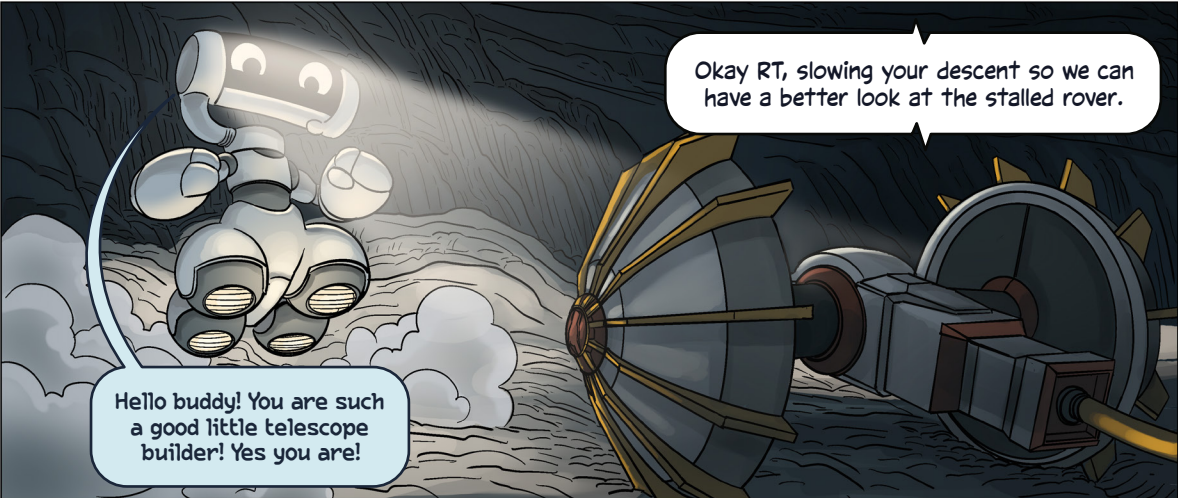
I promise, you won't feel a thing.
Just don't freeze up. Use that extra
power to keep your hands warm,
we may need them later...

Lights!

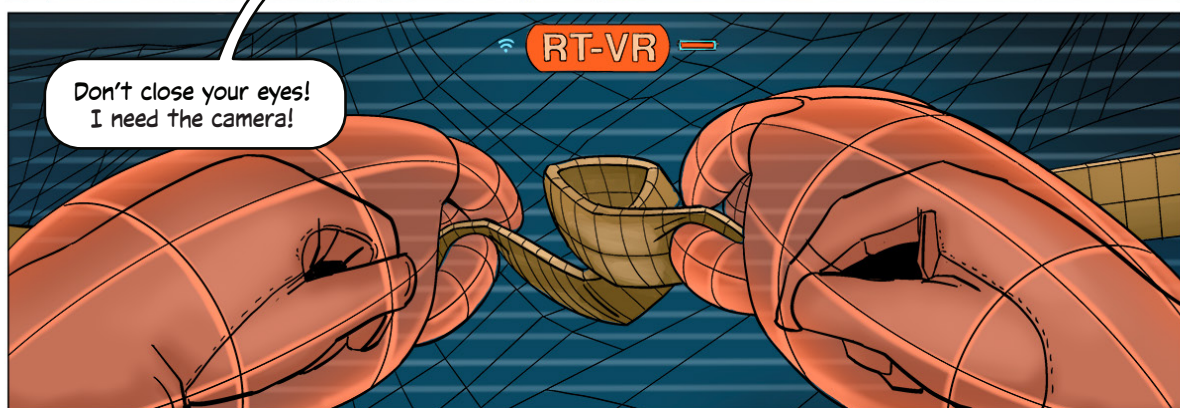
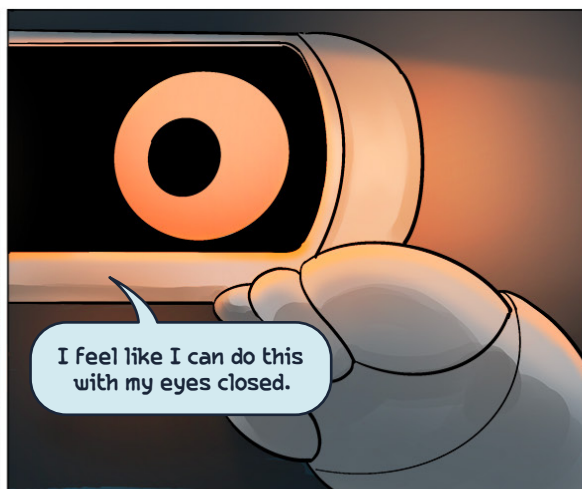
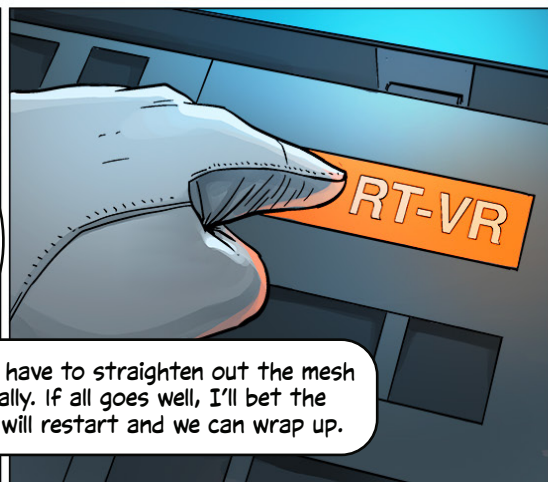


Camera!

Action!

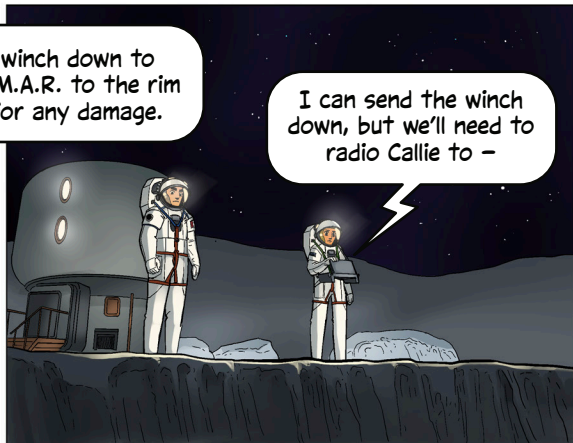


ROBOTIC
EXPLORERS





If we can send the winch down to RT, we can bring the M.A.R. to the rim and I can check it for any damage.



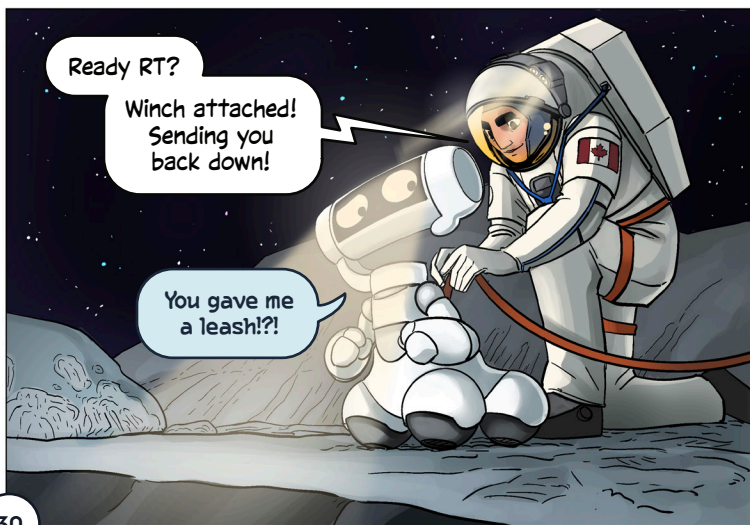
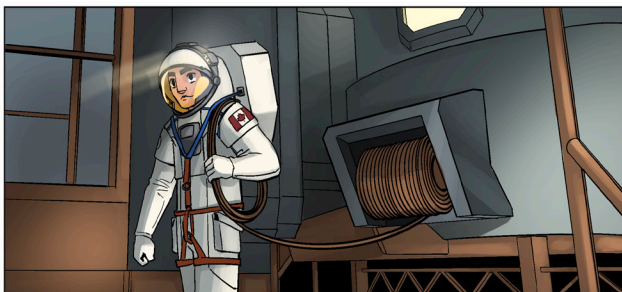
I can send the winch down, but we'll need to radio Callie to -



Consider the plan confirmed! RT, we need you back up top!



On my way!

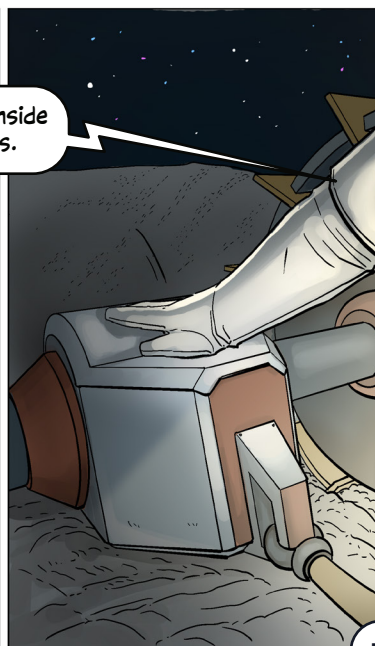
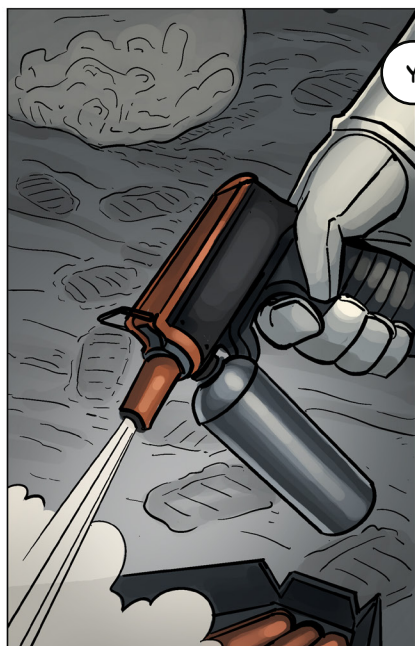
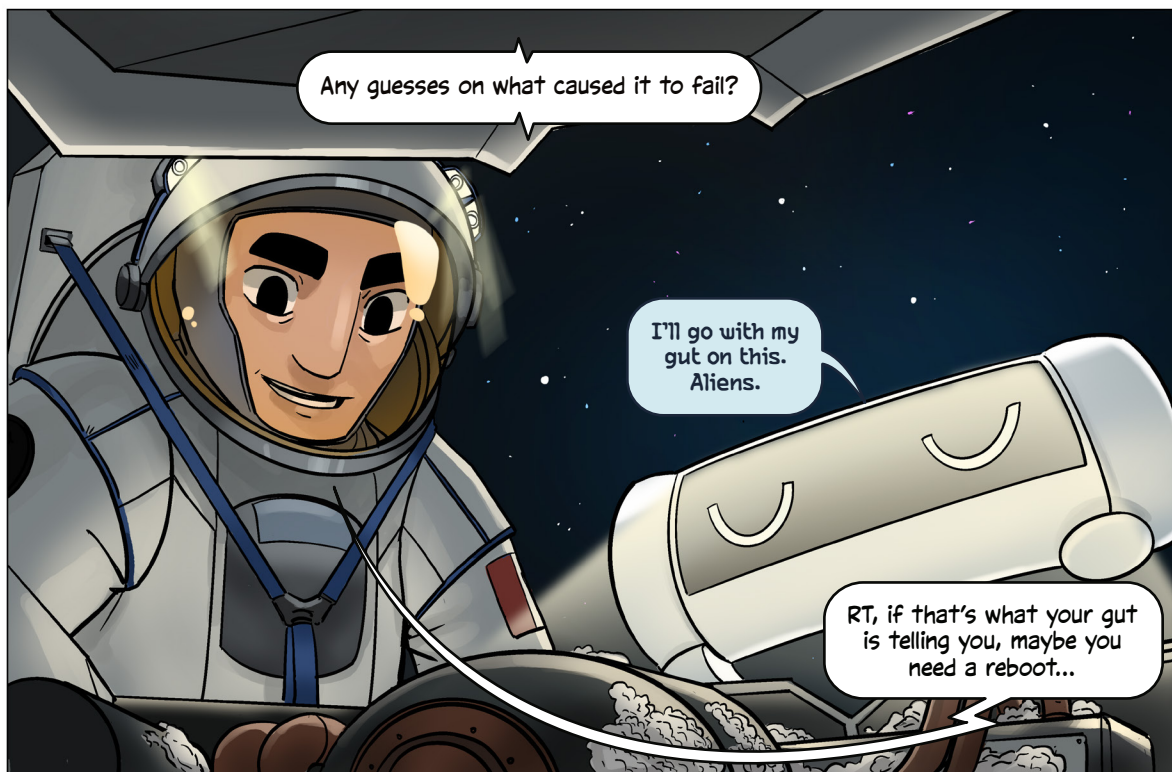
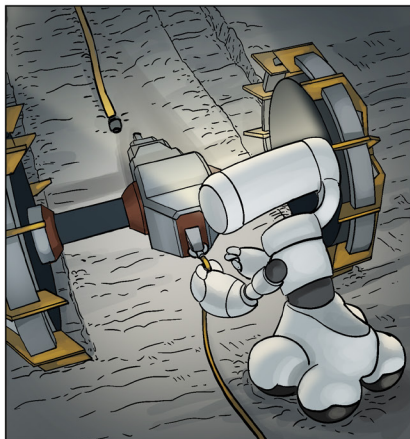


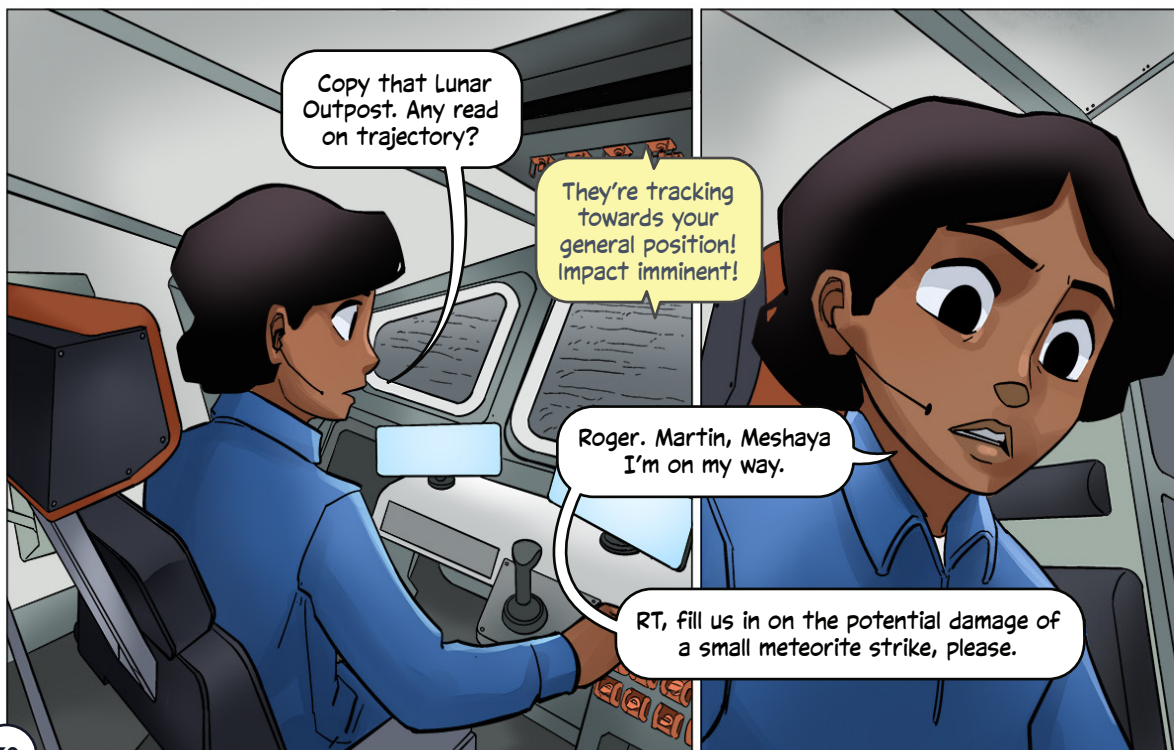
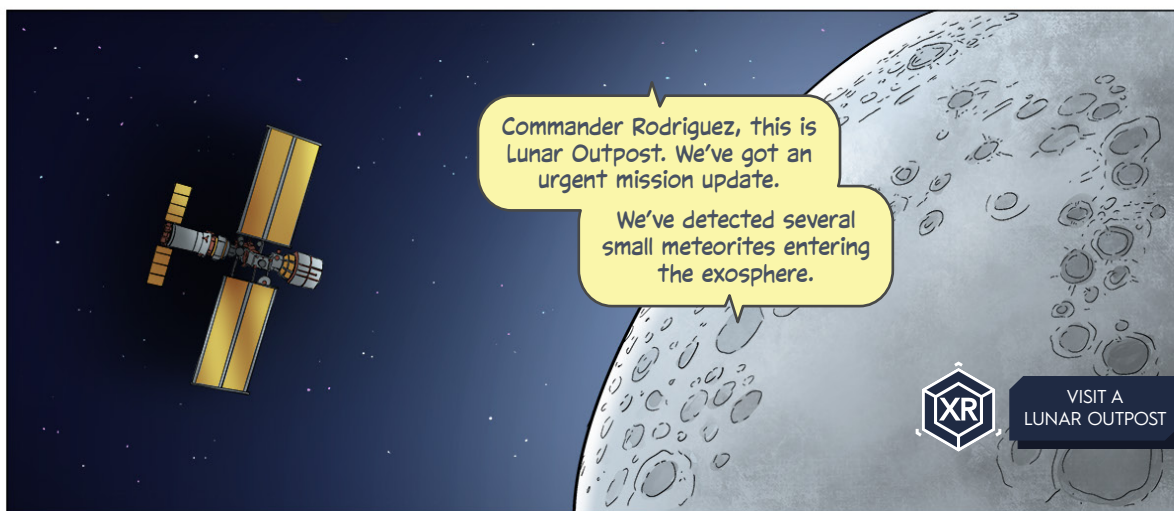
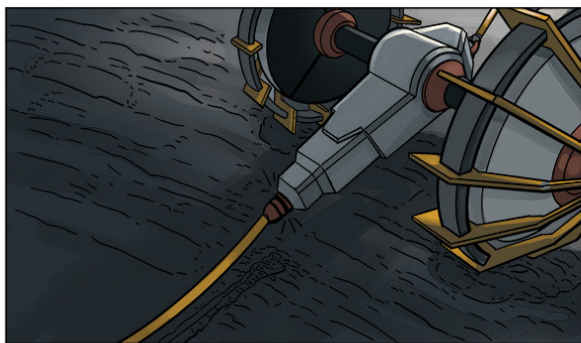
Ready RT?

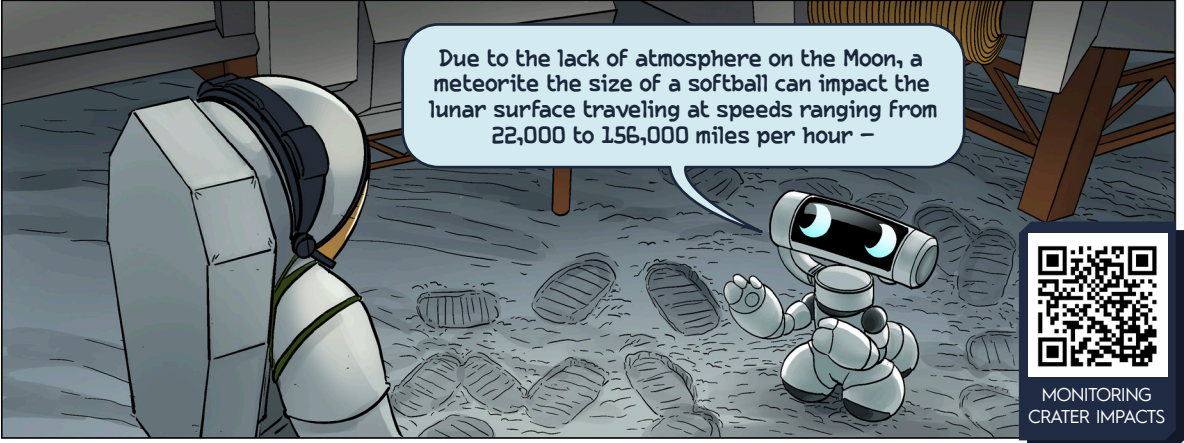
Winch attached!
Sending you
back down!

You gave me
a leash!?!









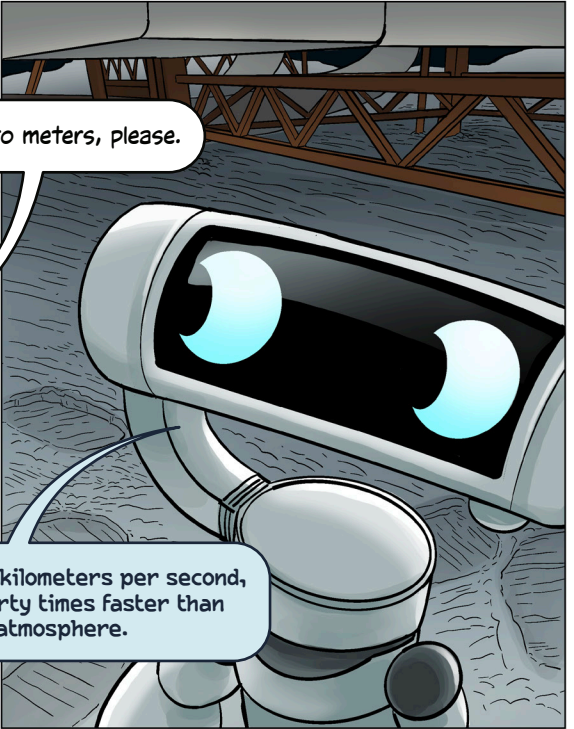
Due to the lack of atmosphere on the Moon, a meteorite the size of a softball can impact the lunar surface traveling at speeds ranging from 22,000 to 156,000 miles per hour –




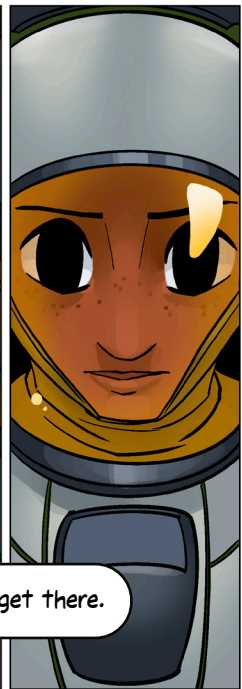


MONITORING
CRATER IMPACTS



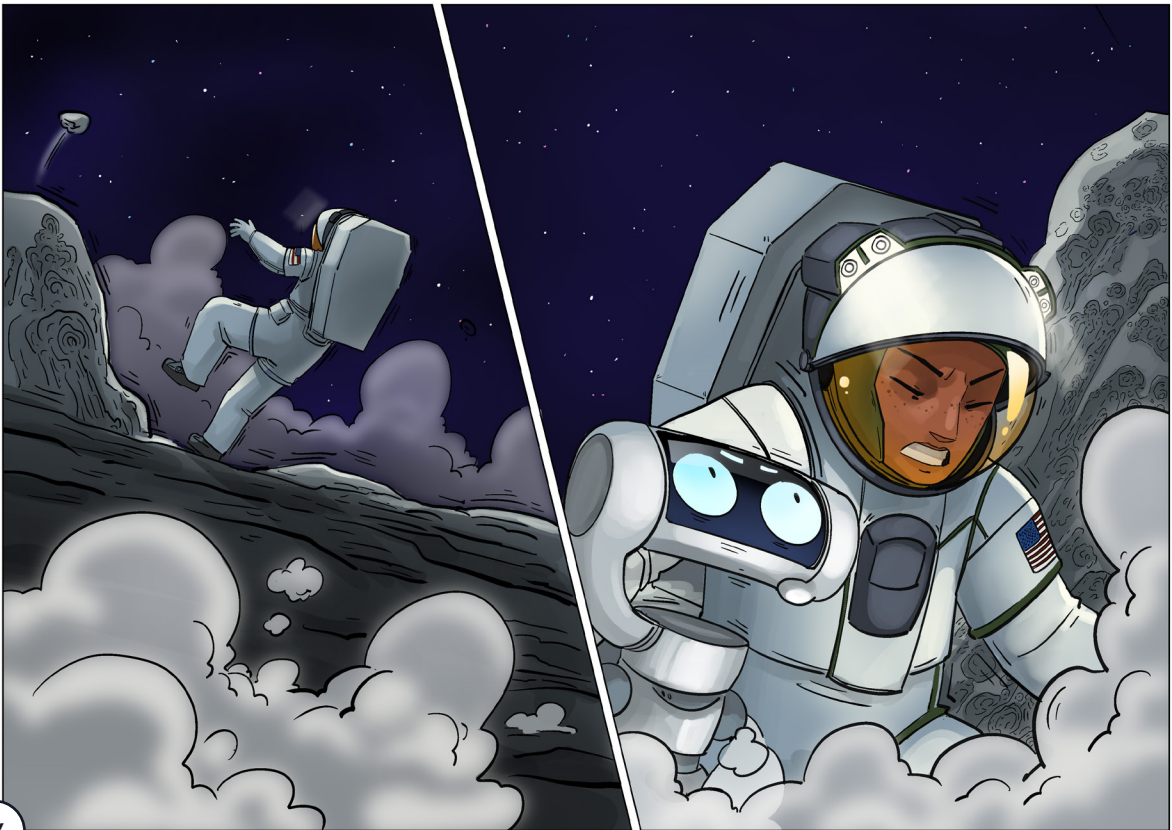
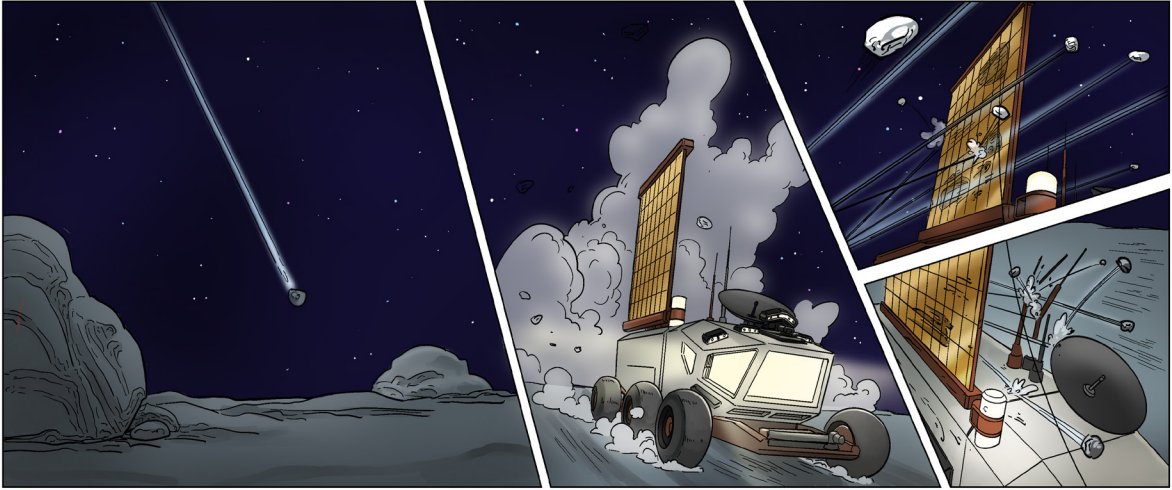
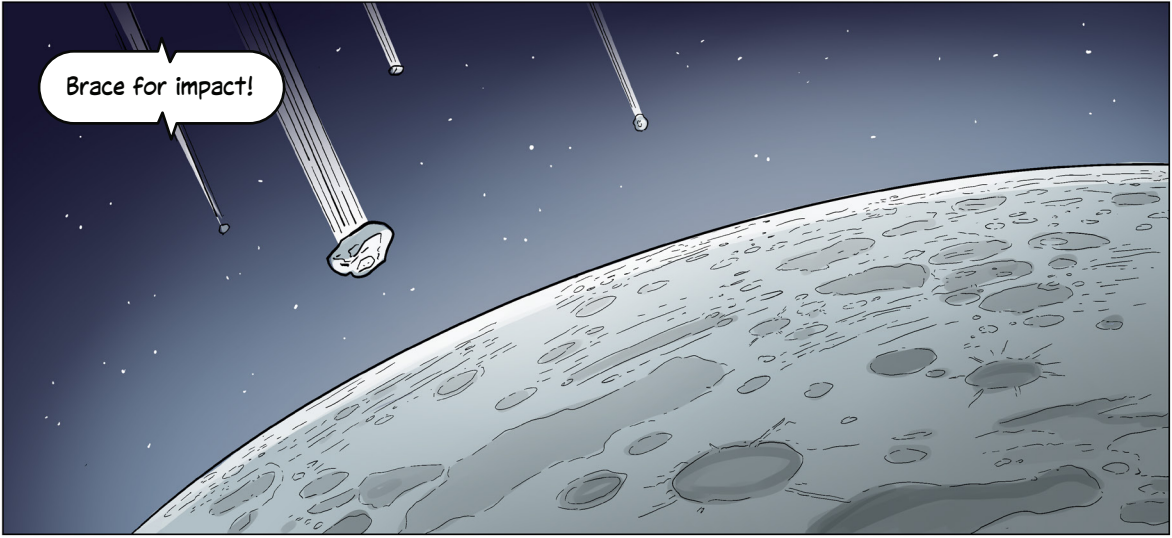
Convert to meters, please.

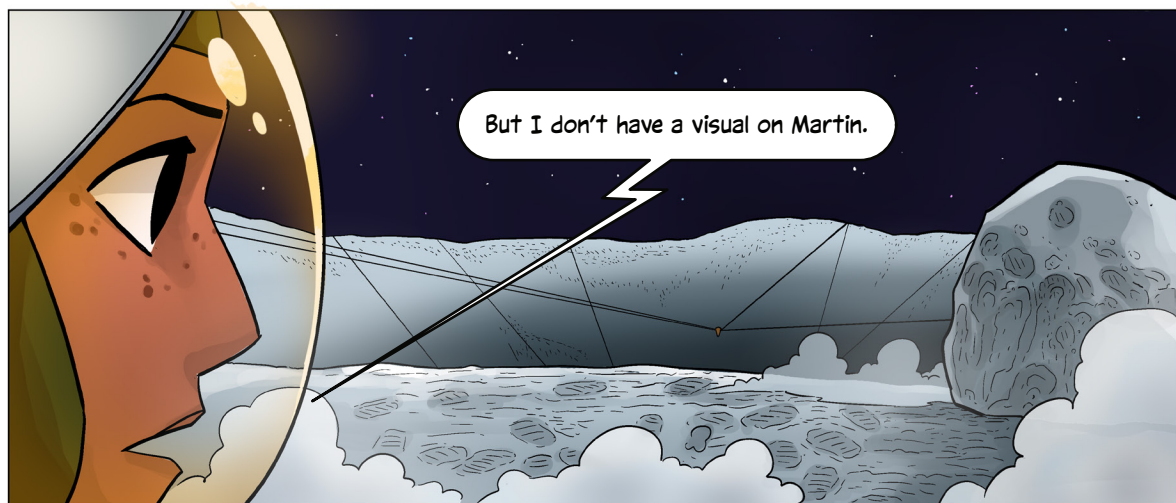
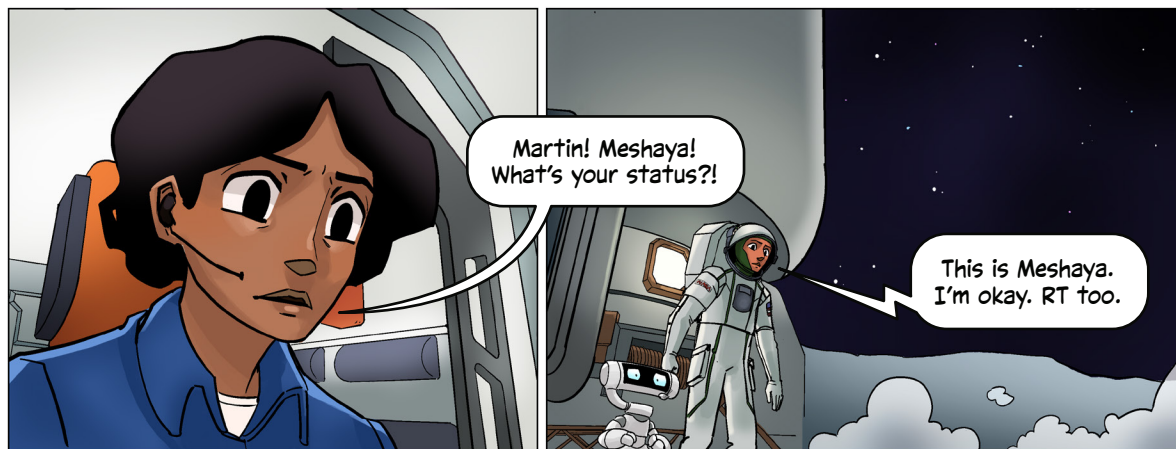


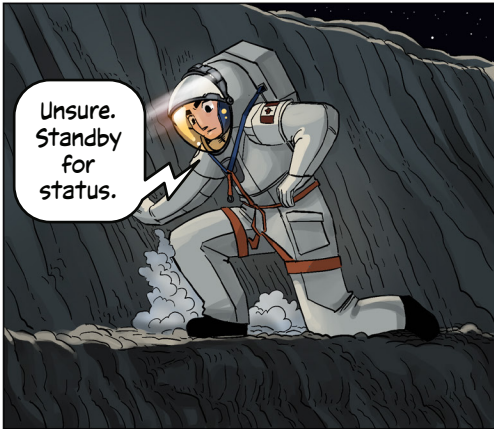
That's ten to seventy kilometers per second, which is roughly thirty times faster than in Earth's atmosphere.



Shelter in place until I get there.

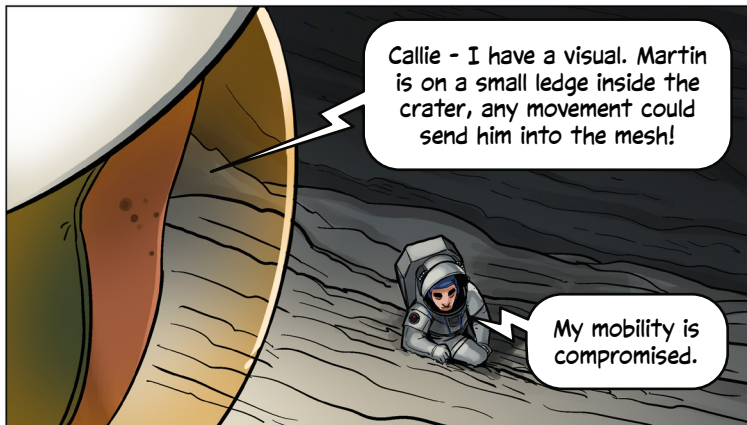








Martin,
don't move!

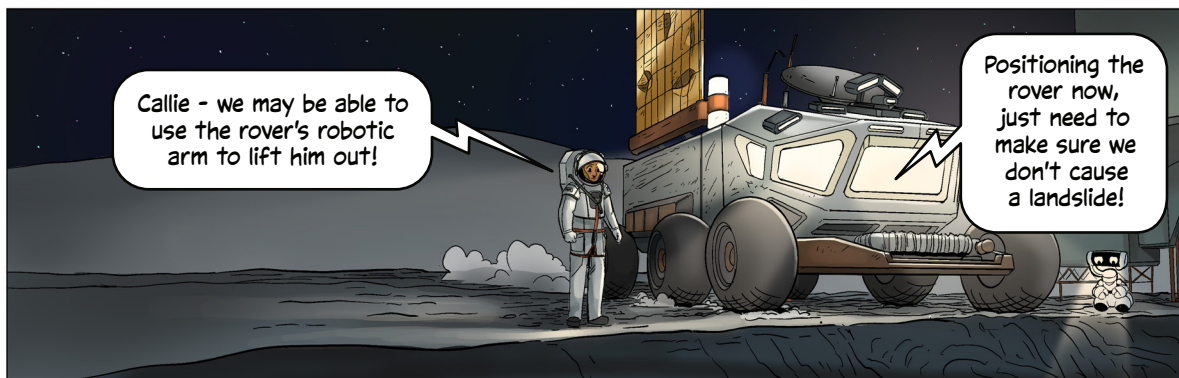


Callie - I have a visual. Martin
is on a small ledge inside the
crater, any movement could
send him into the mesh!

My mobility is
compromised.



It's possible
my leg is broken.



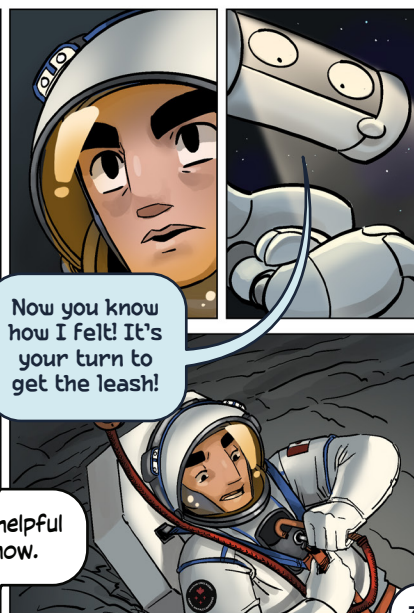
Callie - we may be able to
use the rover's robotic
arm to lift him out!

Positioning the
rover now,
just need to
make sure we
don't cause a
landslide!



Martin, we'll need you to attach
yourself to the harness.

Confirmed.



Now you know
how I felt! It's
your turn to
get the leash!

RT. Not helpful
right now.

BACK IN THE ROVER...

Habitat Control, the rover's electrical system seems to have had a power surge, or a short. We're losing power faster than we should.

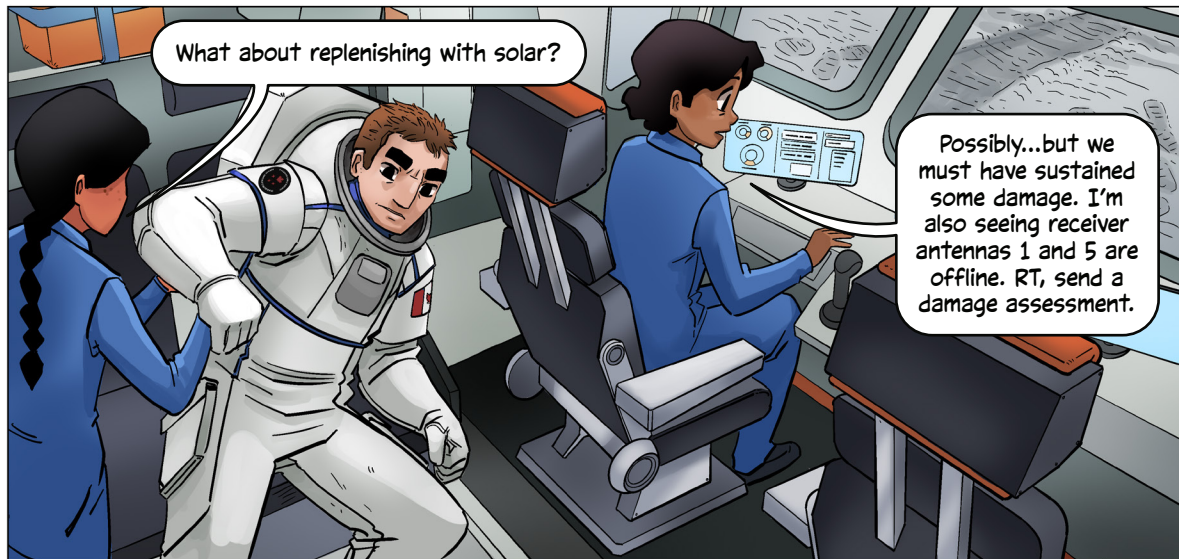
Habitat Control, do you copy?

Callie, what's going on?



COMMUNICATIONS

My instrument readings are showing we are losing too much power...



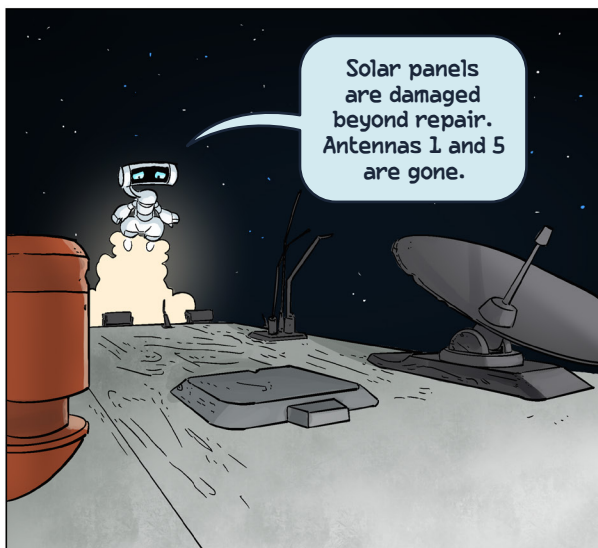
What about replenishing with solar?

Possibly...but we must have sustained some damage. I'm also seeing receiver antennas 1 and 5 are offline. RT, send a damage assessment.



Hmmm...that's not so good...

What are you seeing up there?



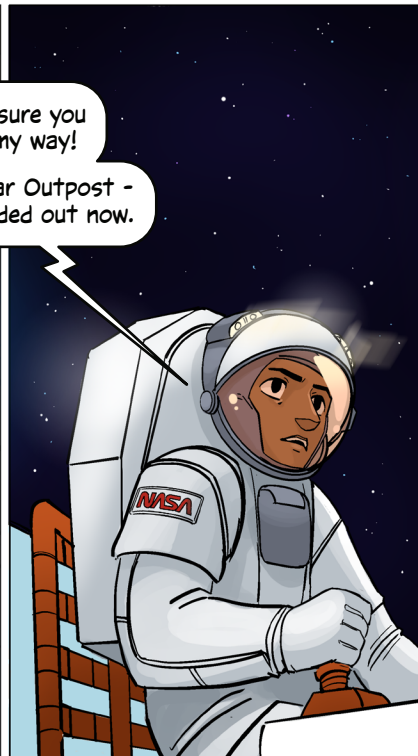
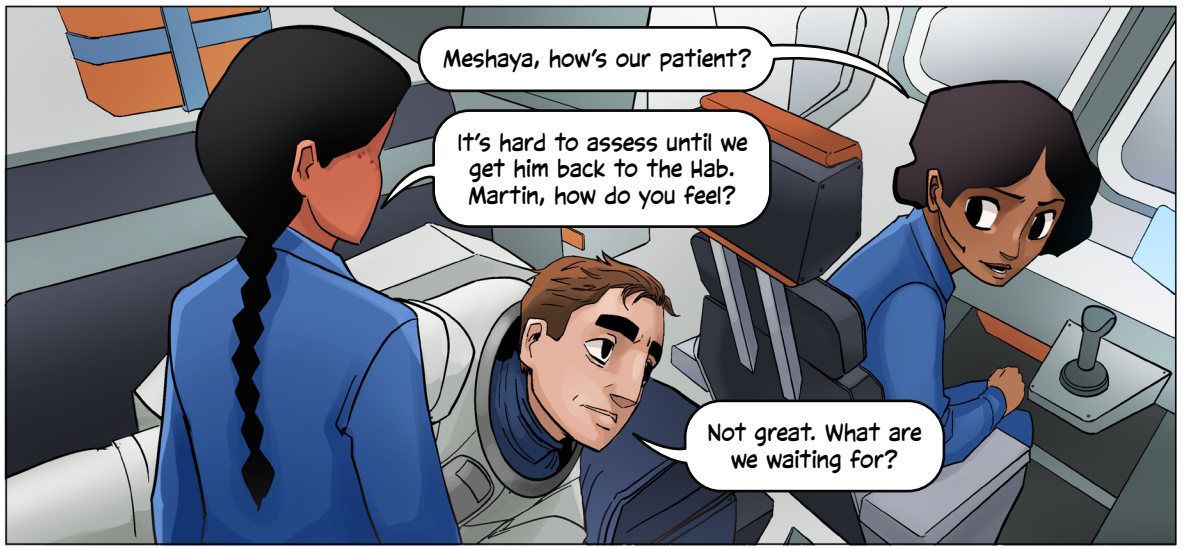
Solar panels are damaged beyond repair. Antennas 1 and 5 are gone.



Do we have enough power to get back to the Hab?

Doubtful. If this gauge is accurate, the power is drawing down much faster than it should be. With the antennas we have left, Habitat Control should be able to hear us, but we can't hear them...

I've shut down all non-essential power to preserve the batteries. For now, we wait...



IN THE ROVER

Blood pressure and heart rate are dropping...I've seen this before, I think Martin's going into shock.

Can you treat him here?

We can start fluids and monitor vitals, but we need to get him back to the Hab's medical bay ASAP.

If we turn off navigation, it should save us enough power to get Martin medical attention sooner.

Too risky. With no navigation system and with our tracks covered by debris, we'd be flying blind. If we go off course...

I've taken that into account.

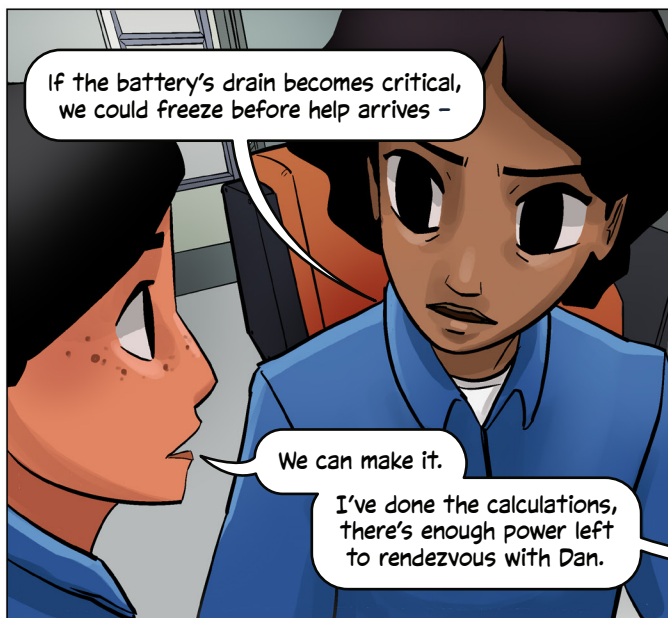
Standard protocol says we stay put. Help is on its way.



Martin's vitals are dropping fast. With the limited equipment we have here, I can't tell what's going on.



We **HAVE** to get him back and we don't have time to wait.



If the battery's drain becomes critical, we could freeze before help arrives -

We can make it.

I've done the calculations, there's enough power left to rendezvous with Dan.



But if we wait...

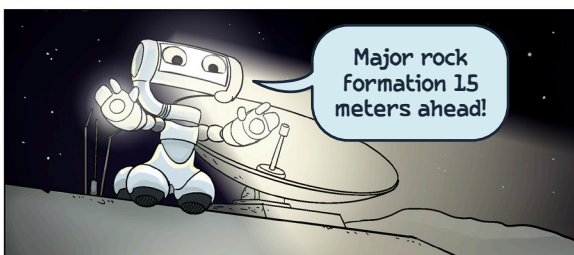
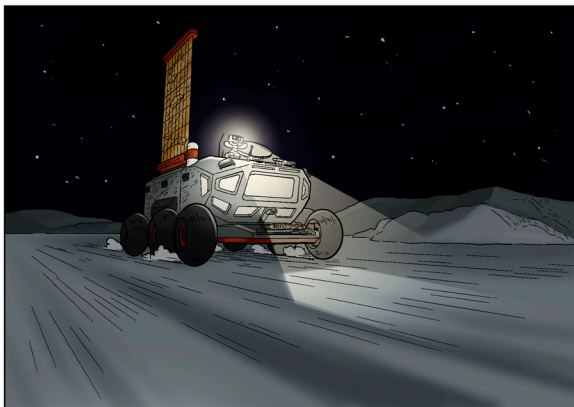


Commander, trust me. We have to go. **NOW.**

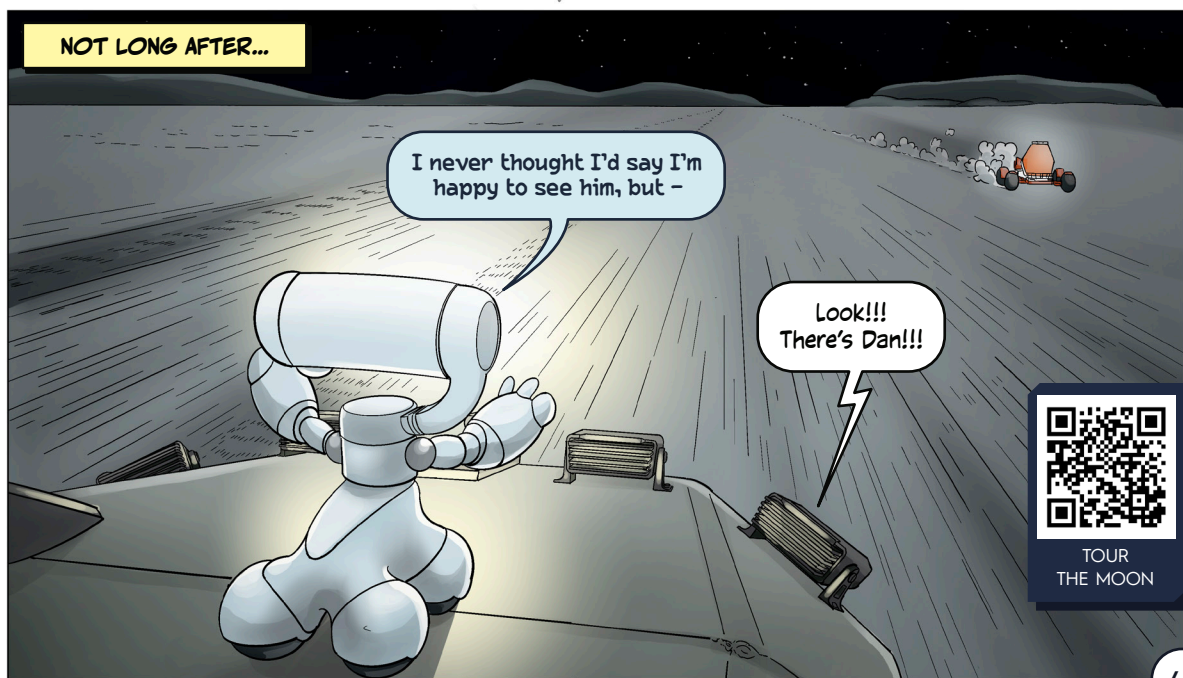
Okay. Let's do this.

If we can pick up our tracks beyond the debris field, all we need to do is-

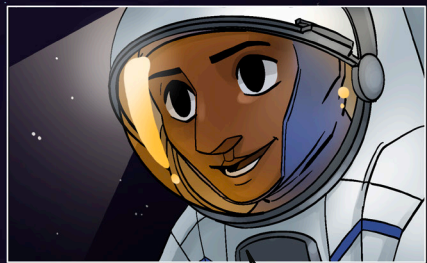
Orienteer using landmarks until we get there.



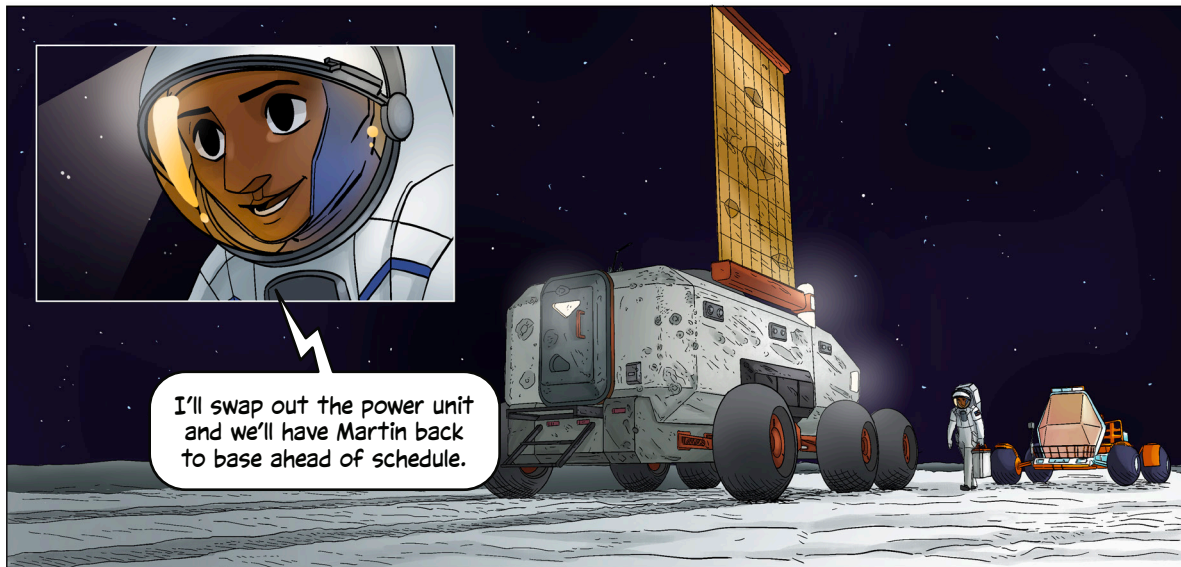
NOT LONG AFTER...



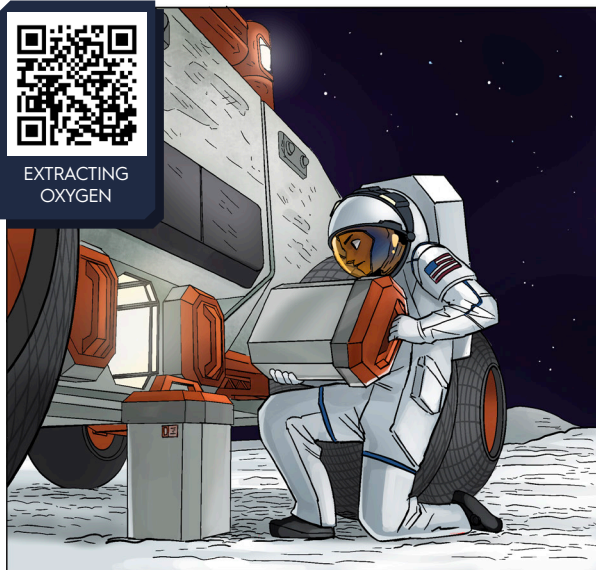
TOUR
THE MOON



I'll swap out the power unit
and we'll have Martin back
to base ahead of schedule.



EXTRACTING
OXYGEN



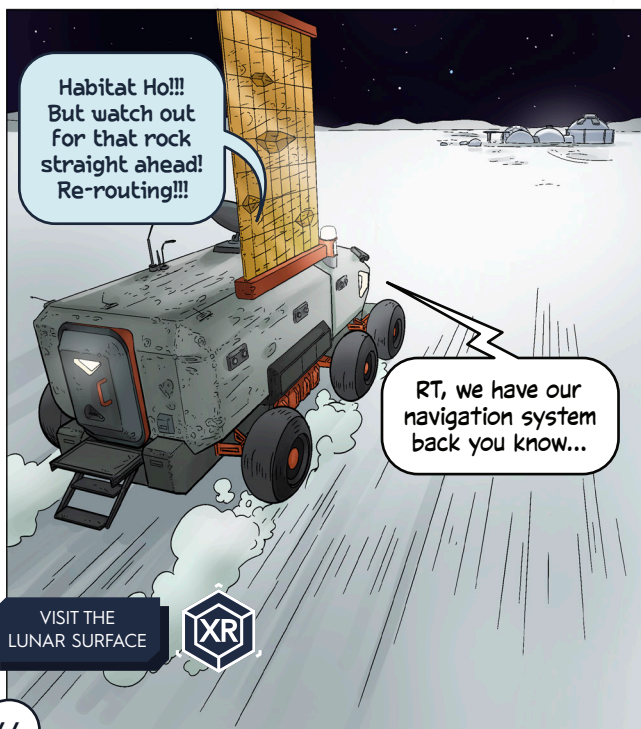
Unit replaced.
Fire it up!



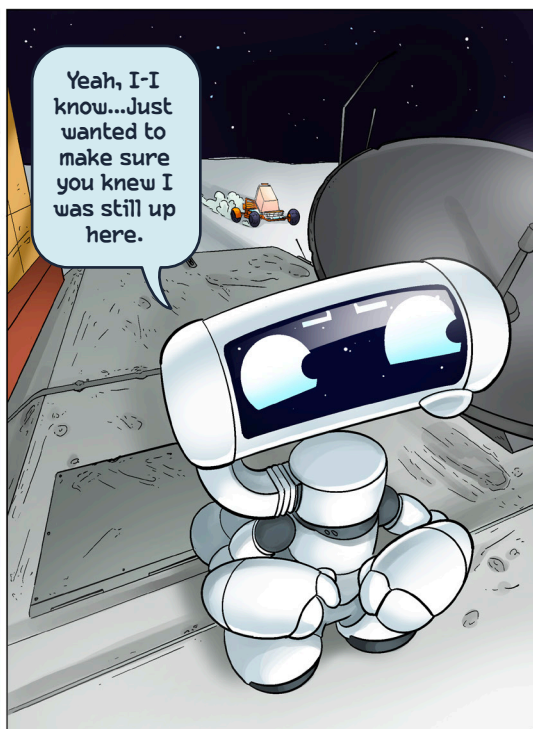
Confirmed,
we're good to go!
Let's get
back home.

Habitat Ho!!!
But watch out
for that rock
straight ahead!
Re-routing!!!

RT, we have our
navigation system
back you know...

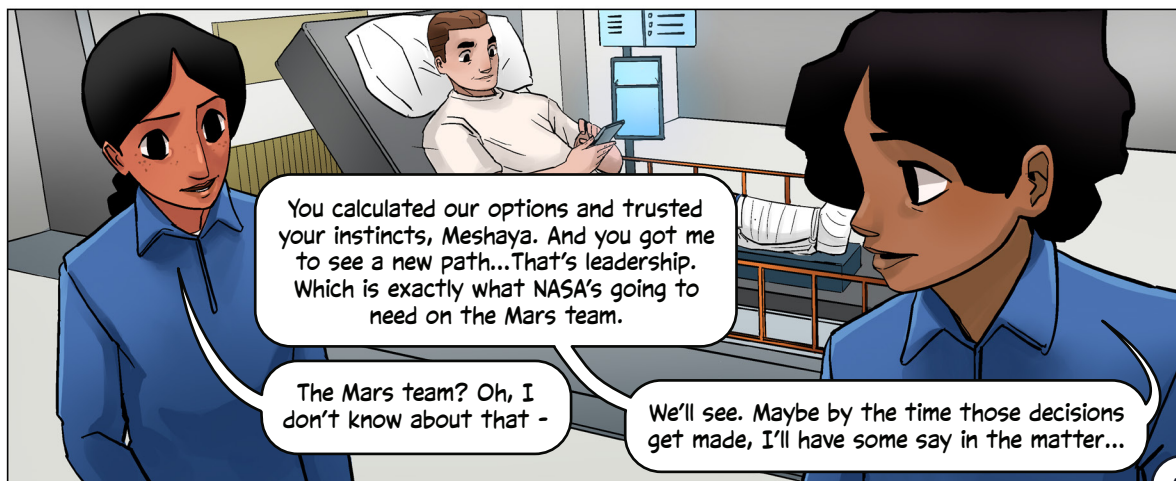
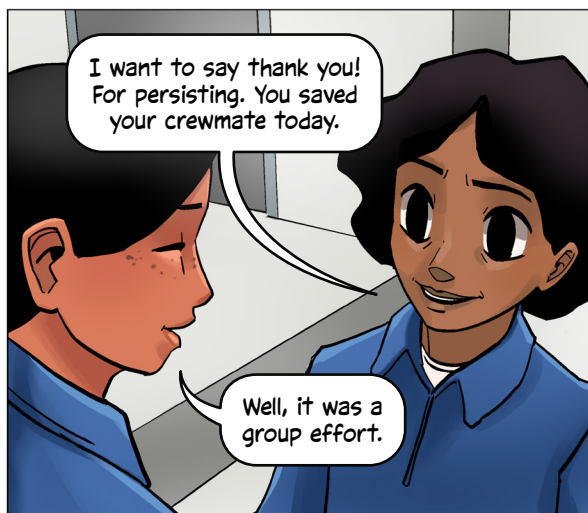
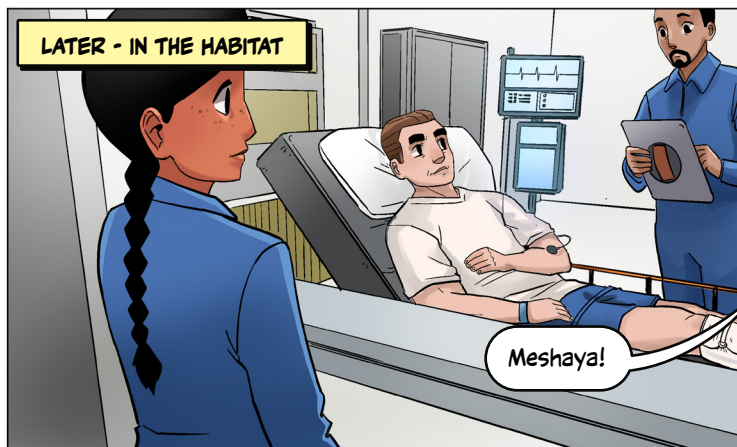


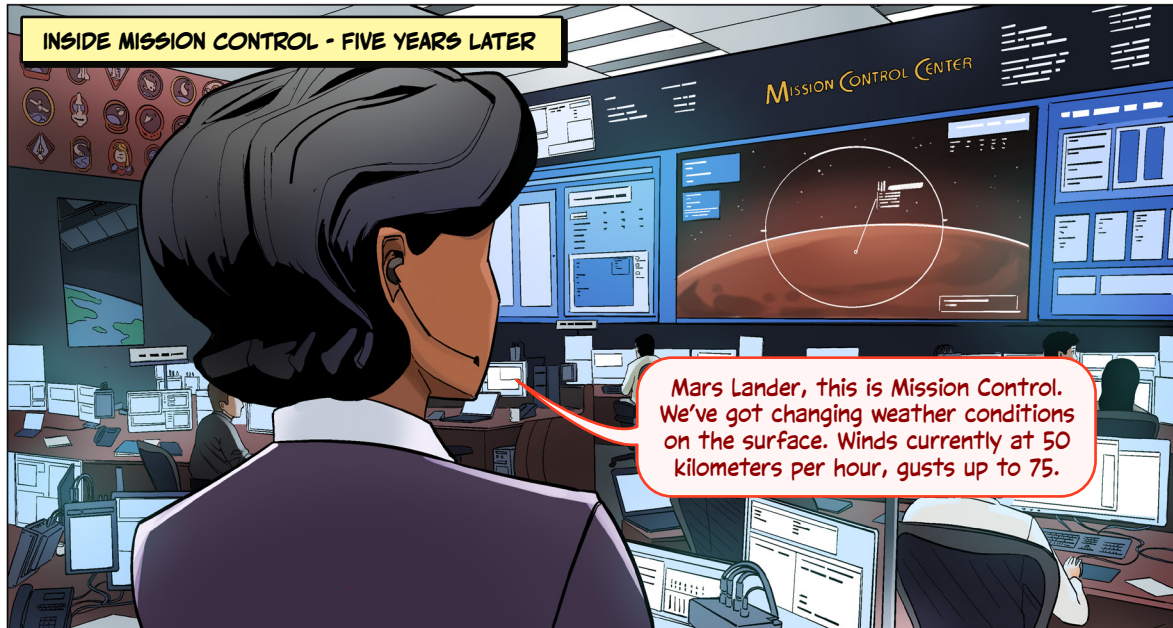
Yeah, I-I
know....Just
wanted to
make sure
you knew I
was still up
here.



VISIT THE
LUNAR SURFACE



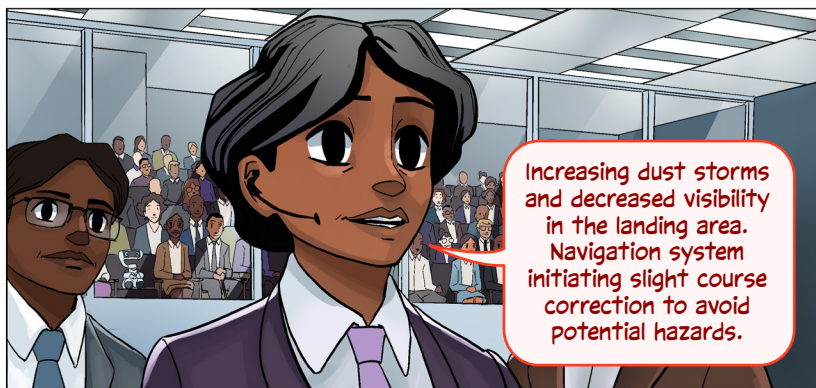




Mars Lander, this is Mission Control. We've got changing weather conditions on the surface. Winds currently at 50 kilometers per hour, gusts up to 75.



That's my daughter.

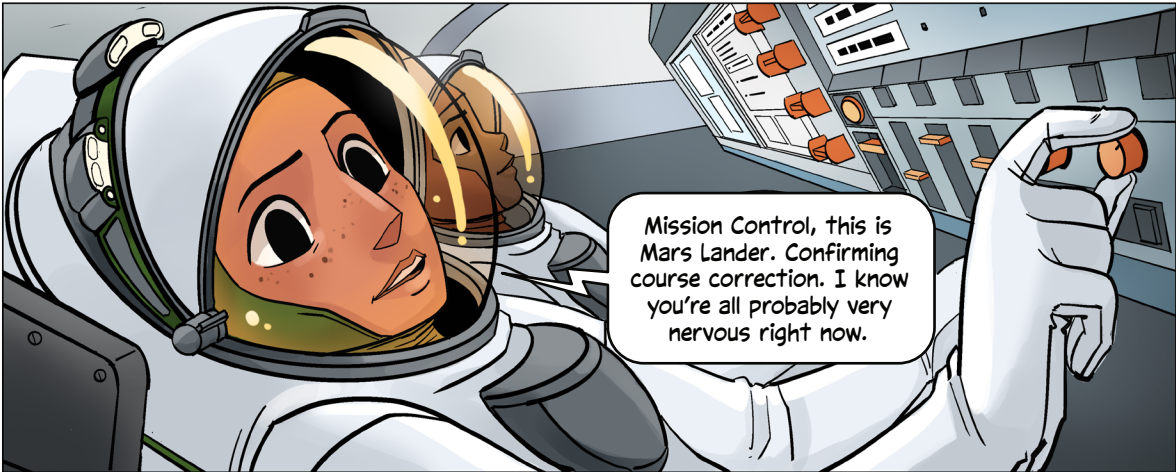


Increasing dust storms and decreased visibility in the landing area. Navigation system initiating slight course correction to avoid potential hazards.



Mars Lander, you are go to enter descent. I repeat, you are go to enter descent. We'll be losing communications momentarily.

From one first woman to the next, proud of you, Shaya. The entire world is with you.



Mission Control, this is Mars Lander. Confirming course correction. I know you're all probably very nervous right now.



But all our systems look good.

We have one more thing we want to say before we go radio silent.



What's the one thing, crew?

We ARE Going!

Initiating descent now.

Commander! We're getting updated readings from the surface. The weather's changing rapidly. There's a new dust storm at the landing site.

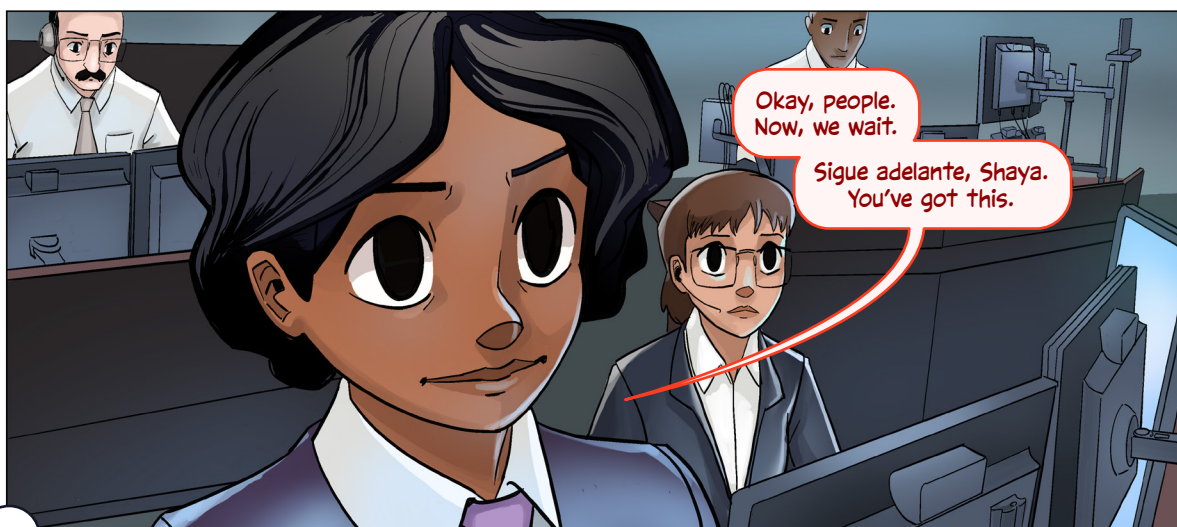
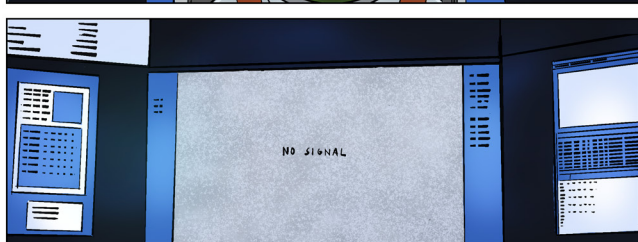
You may have to assume manual control as you approach the surface. The decision will be yours.



Roger that, Mission Control. We're getting those readings, too. Ready to override if needed. We're -

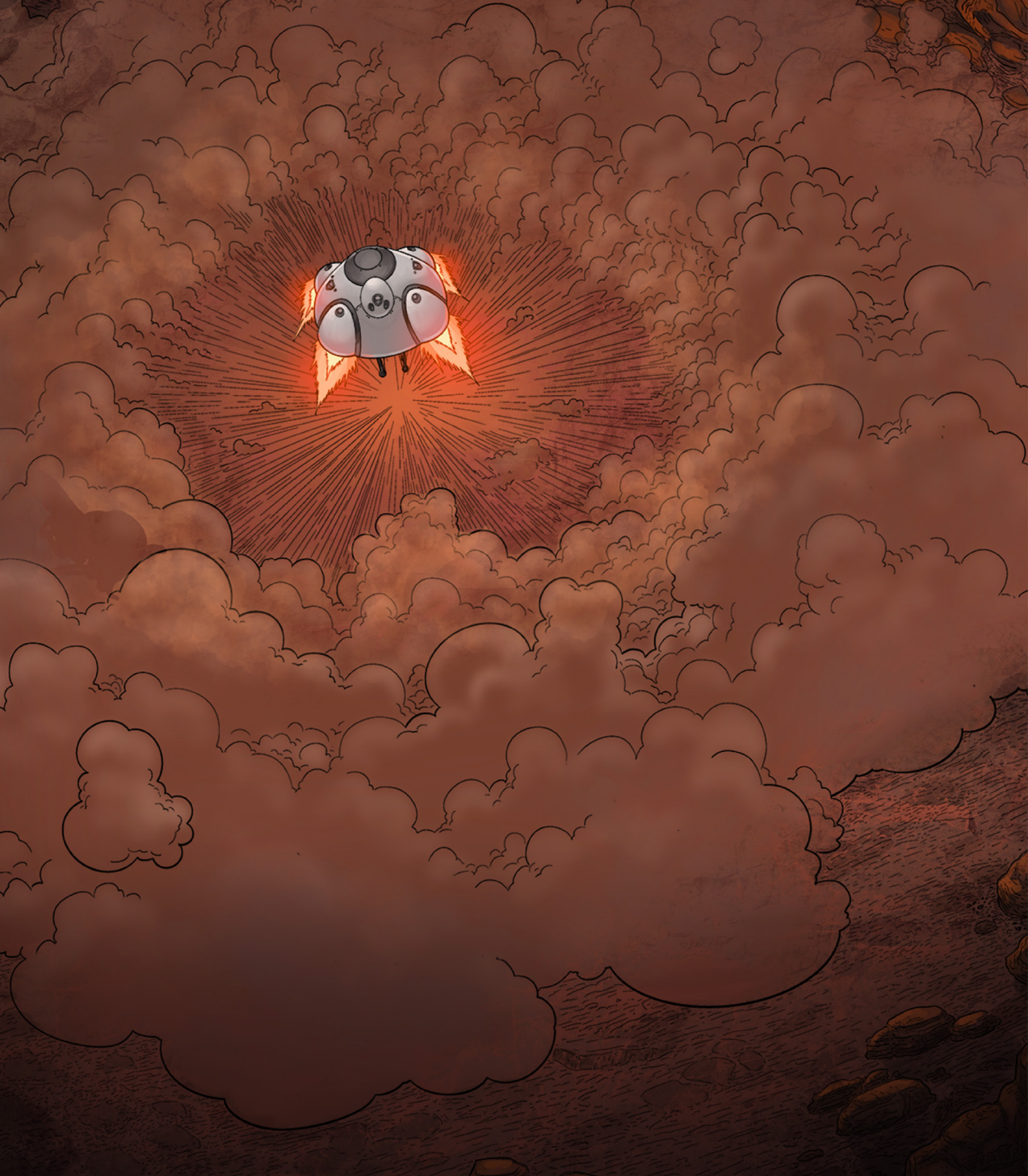


We've lost audio.



Okay, people. Now, we wait.

Sigue adelante, Shaya. You've got this.



TRAILBLAZING MISSIONS

With the Artemis program, NASA will land the first woman and person of color on the Moon, using innovative technologies to explore more of the lunar surface than ever before. With Artemis, we add to NASA's legacy of inspiring the world through discovery. We will use what we learn on and around the Moon to take the next giant leap to Mars. **For more historic missions, scan the QR code.**



1969
Apollo 11
First person to
walk on the Moon



1976
Viking 1
First soft landing
on Mars



2022
Artemis
First launch of SLS
and Orion capsule



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Written by

Brad Gann & Steven List

Illustrations by

Brent Donoho

with **Kaitlin Reid**

National Aeronautics and Space Administration

NASA Headquarters

300 E Street S.W.
Washington, DC 20546
www.nasa.gov/centers/hq

www.nasa.gov

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