

Tour the Planets: Jupiter and Venus Conjunction Live Chat
Expert Dr. Melissa A. McGrath
March 25, 2012

Bstarpit: At what time does this happen?

Melissa: Hi there -- the chat is now officially open. :)

Fart: hi nasa, how many motorcycles are in space and why

Melissa: None that I know of! :)

MorningLightMountain: Thx for doing this :)

Melissa: Hey, thanks for joining us!

Sammy: Why is it so blurry?

Melissa: The Earth's atmosphere causes the image to jump around.

Jennifersimmons: we live in georgia, when is the best time to see it and can you see it with the naked eye?

Melissa: Yes, you definitely can. Walk outside right now! Look toward the west and the setting sun. Jupiter and Venus are the two brightest things in the sky -- along with the moon. Enjoy!

Vanel: How far away is Jupiter?

Melissa: 5 times further away from the sun than Earth.

nishant_chandolia: what is it all about?

Melissa: It's a rare alignment of two bright planets. Beautiful in the evening sky! (Walk out and take a look...)

MorningLightMountain: How often does the conjunction happen?

Melissa: It's every few years, but this is an especially close conjunction and the planets are VERY bright.

the_space_guy: Hi Melissa: how are you?

Melissa: Great, how are you? :)

brianSB: what's the music playing over the live stream of Jupiter?

Melissa: It's called Third Rock radio. Our moderator Janet is going to have a link for us in a moment...

Sammy: Would the image get clearer after a while?

Melissa: No, this is about how it will be for tonight, but the sky WILL get a little darker, which may help.

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ATX Is it true that all planets will align up on Dec 21st

Melissa: No, they won't.

the_space_guy: Will the planets collide?

Melissa: No, it's only an apparent alignment -- they're not really close together physically.

Burnme: Am I just putting them there mentally or could you make out bands in the atmosphere?

Melissa: No, the bands are definitely visible! We can see them, too, but they come and go.

Nina: Is Jupiter bigger than Earth? If so, how much?

Melissa: Yes, it's about 10x the diameter of Earth. (300 times more massive)

Rpa: How often can we see Jupiter and Venus in the night sky with our naked eye?

Melissa: Often -- at least once per year. This year they're just aligned well and very bright.

Fncquotes: Why is there a storm on Jupiter?

Melissa: Good question -- no one really knows why there is such a large and persistent storm, the Great Red Spot.

lili098: How far is Venus from Earth?

Melissa: It's about 40 million miles.

XtianDG: why is Jupiter often called earth's big brother?

Melissa: Because it's the biggest, most massive planet in the solar system. It's almost a mini-star.

Melissa: Hey everyone -- the video is dark now because we're restarting the computer. It should be right back up in a moment.

the_space_guy: Can I buy this music on iTunes?

Moderator Janet: Music is from NASA's Third Rock radio - listen

@<http://www.rfcmedia.com/thirdrockradio/>.

nishant_chandolia: We are not able to see the conjunction from here in India? Please help us.....:D

Melissa: You should be able to see it tonight, your local time. Look to the west right after sunset.

Sarah_L: Hello Melissa:. The conjunction is visible in every part of the Earth?

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Melissa: Yes, it is.

Mary: Unfortunately, we have clouds in eastern NC. The planets have been quite visible for the past few weeks.

Moderator Janet: Check our Ustream feed at: http://www.nasa.gov/connect/chat/jupiter_venus.html

Kp: Waiting for the sun to go down here in northern Wisconsin so I can see it

Melissa: Yes, good luck!

Fncquotes: Do any people live on Venus?

Melissa: Not that we know of. :)

Micky: nice video chat

Moderator Janet: Thanks - we enjoy hosting the chats :)

Sammi: What's the most common element on Jupiter?

Melissa: Hydrogen -- just like the sun. (More than 90%)

Jonkrow: Hello! is the conjunction currently below the horizon from Britain?

Melissa: It should be visible after sunset.

ChrisP: What type of telescope is the nasa feed coming from?

Moderator Janet: Feed is coming from a 14 inch Schmidt-Cassegrain telescope.

Mary: Which is the largest of the two?

Melissa: Jupiter, by far!

Nina: I live in MD, where is it (I just walked outside)?

Melissa: Great! Look west, toward sunset, a little above the horizon.

lili098: How often does this alignment occur?

Melissa: Every few years.

Kelleyf: too cloudy in central new york state to see it this evening so far

Moderator Janet: Check our Ustream feed: http://www.nasa.gov/connect/chat/jupiter_venus.html

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nishant_chandolia: When can we see it from India?

Moderator Janet: Check our Ustream feed: http://www.nasa.gov/connect/chat/jupiter_venus.html

Patb: Will we see both planet at once in the webcam view?

Melissa: No, the field of view is too small. Just one at a time. BUT -- you can if you walk outside and look to the west.

Appl: I m in Ottawa, Canada. What time will I able to see this?

Moderator Janet: Just after sunset.

Dvsachs: will Venus appear in the stream

Melissa: Yes, it will!

Missioncontrol: we have too much cloud coverage here in Asheville, NC

Moderator Janet: Check our Ustream feed: http://www.nasa.gov/connect/chat/jupiter_venus.html

Oryx: Even though it appears to us that Jupiter and Venus are so close together, it saddens me to think that they're not truly able to enjoy one another's company right now. Which of the planets formed first?

Melissa: Pretty much at the same time, for all intents and purposes.

Patb: Can they be seen from outside if we live in Canada (Quebec)

Moderator Janet: Yes, tonight and tomorrow night just after sunset.

Mck: How long does it take the light from Jupiter to reach us on earth?

Melissa: It takes about 40 minutes to reach us.

Charles: this is so cool!

Melissa: Glad you're enjoying it!

KevinGam: How fast does Jupiter rotate on its axis? It looks like it is very fast

Melissa: Once every 10 hours.

Fncquotes: Janet has such a cool job. Are there any openings at NASA for chat moderator jobs?

Moderator Janet: Yes, I do have a cool job :)

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Melissa: Everyone look at the video feed! Got a great close-up of the moon going...!

burnme: WOW absolutely gorgeous shot of the big man!!

Melissa: Fantastic image...

Fncquotes: When should I be able to see it in New Texas?

Moderator Janet: Just after sunset tonight and tomorrow night as well.

Jonkrow: its the largest planet in our system right?

Melissa: Yes, Jupiter is the largest one in the solar system.

Nina: A few minutes ago, Jupiter looked blue. Why is that?

Melissa: It's the Earth's atmosphere making it look blue.

Chops: why I can't see Venus?

Melissa: Only one thing in the telescope at a time...but it's coming. :)

Fncquotes: Will the light be as bright as like a flashlight?

Melissa: It's pretty darn bright! Brighter than any star.

Fncquotes: Why wasn't there more press coverage about this? Is it a conspiracy?

Melissa: There's been quite a bit of coverage -- you just have to know where to look. :)

Blot: Why are they so bright this year?

Melissa: They're bright every year, but it's particularly spectacular because they're lined up.

Kayce: Okay, so I'm hearing all this stuff about the conjunction, and it's apparently a Very Big Deal. :)

Why is it such a big deal? Is it the frequency (or lack thereof) that this type of thing happens maybe?

Moderator Janet: They are lined up and it's particularly spectacular.

nishant_chandolia: Can you tell me what is the jupiter-saturn conjunction?

Melissa: It's just when Jupiter and Saturn are aligned, instead of Jupiter and Venus -- like tonight.

Kayce: Is today the closest they will get to each other before they start moving apart again? If not, when will that happen?

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Melissa: Yes, it is. That's why we're doing the chat tonight. But they'll still be close, and have good viewing for a few nights..

diego_dandrea: I read books about astronomy as a child and always loved the subject but due to lack of jobs in the area here in Brazil I decided to do arts (another area that I love) but I'm really considering doing astronomy when I get older. Any advice for a hobbyist astronomer?!

Melissa: Get a good math and science background! And be willing to work hard. I highly recommend it as a career!

Mary: They are two different kinds of planets, right? Venus is terrestrial? and Jupiter is Jovian?

Melissa: Yes, exactly right!

Fncquotes: How far is 40 million miles?

Melissa: A long, long way...!

Chops: How many moons have Jupiter an Venus?

Melissa: Venus has none, and Jupiter has 66 confirmed moons.

Nina: What is Jupiter made of?

Melissa: Gas, mostly hydrogen, just like the sun.

Jonkrow: will the conjunction rise ahead of the sun here in the UK?

Melissa: No, after sunset.

Lizzielulu: gorgeous here in Akron, OH!

Melissa: Hello, Akron -- so glad you're viewing with us!

Indah_Huegele: How hot is the surface of Venus?

Melissa: 890 degrees F. HOT!

Aubvick: Have we sent probes to Jupiter?

Moderator Janet: Juno launched last year. More info here:
http://www.nasa.gov/mission_pages/juno/main/index.html

Kelleyf: why does Venus seem to be partially eclipsed?

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Melissa: Venus exhibits phases just like the moon because it's interior to the Earth in orbiting the sun. When it's brightest, we only see half of it because it's off to one side of the sun from us.

Scooby_Doo: Will aliens attack us and use our bodies as food?

Melissa: I hope not. :)

Pharoah: How much more mass did Jupiter need to become a star?

Melissa: Good question! About 25% more mass to become a star.

SpaceLover23: How long will this alignment last?

Melissa: It's been happening for several weeks and will continue for another week or two. Then Jupiter disappears because it gets too close to the sun to see from Earth.

Fncquotes: Wait, NASA helps India?

Melissa: NASA funded an instrument on the Indian mission to the moon named Chandrayan -- so yes, we do work together.

lili098: Is Venus not the hottest planet in the Solar System?

Moderator Janet: The atmosphere is around 900 degrees - that is what makes it the hottest!

Mary: When we see it in th sky, Jupiter is the largest of the two?

Melissa: Yes, Jupiter is much bigger than Venus.

Sonettesp: What evening will the closest apparent approach be visible on the East Coast?

Moderator Janet: Tonight is the peak, but also will be visible tomorrow night.

Crikabrazil: Hello. I have seen two stars bright in sky very close each other? May be Venus and Jupiter?

Melissa: Yes, absolutely.

Patb: Is it true Venus is the brightest object in the sky, except the moon and sun?

Melissa: Yes, that is true.

diego_dandrea: Are there any plans on visiting Jupiter?! Robots of people

Melissa: We've had several mission (spacecraft) visit Jupiter already and there's another on its way right now called Juno.

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Sammi: Is NASA going to do more events with the live chat? I really like this.

Melissa: Yes, we are! There's a Lyrids meteor chat in April, and we'll be observing other planets throughout the year.

Chops: Does it mean that only 10% is solid mass in Jupiter?

Melissa: It's that or even less. It may have a very small solid core, but it's mostly gas.

diego_dandrea: Sun has set a long time ago in Brazil, will I still be able to see it from here?

Melissa: If it set a long time ago, probably not. You need to look right after sunset (maybe a couple of hours after sunset at most).

MorningLightMountain: Do you gain any scientific data, or is it just a cool event to happen?

Melissa: Good question. It's mostly just a cool event to encourage sky-watching.

Fncquotes: Are the moons of Jupiter and Venus gonna collide? I am really scared.

Melissa: They're not close in space, so no need to be afraid. :)

nishant_chandolia: WE want to video chat but all we are doing is writing questions....can we not video chat

Melissa: Right now we don't have a video chat for this one, but we're enjoying the questions you send in!

Kayce: From what I'm seeing on my skymap, Venus is actually higher in the sky and brighter, while Jupiter is lower and less bright. I'm guessing (and telling my 4-year-old) that it's because Venus is a lot closer to Earth and therefore appears larger. Please tell me I haven't been lying to him... *laughing*

Melissa: That's okay -- Venus is closer and therefore brighter...but it doesn't have anything to do with which one is higher in the sky.

Mary: Nina, I hope you have better weather than I do right now. I have my telescope all set up but the clouds won't permit it. I'll try again tomorrow night.

Melissa: Tomorrow night will still be good for viewing, and maybe even the night after, but the moon will start to be a factor after that.

Liz: Would the Galilean moons be too small/blurry to see in the live feed?

Melissa: No, they shouldn't be. We should be able to see them, if they're in the field of view. You can actually see them with binoculars, if you can hold them steady enough...

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Melissa: Hey everyone -- beautiful Venus is on the live feed. See how it's only a half view, unlike the full disk of Jupiter? That's because of the phases of Venus.

mwilkinson3: 'evening all... just came inside from photographing the conjunction in NY

Melissa: Hope it was a beauty for you. :)

Time: can you only see it just after sunset?

Melissa: For maybe a couple of hours after that.

Melissa: We just talked to the telescope experts. They can see the Galilean satellites in the telescope finder, but the field of view is too small to see them and Jupiter at the same time. But we may see Europa's shadow on Jupiter later, toward the end of the chat.

Space_Core: Is Nasa the farthest ever in space?

Melissa: Yes, we have a spacecraft on its way to Pluto and also we have two spacecrafts that have left the solar system completely.

Pharoah: At what date will Jupiter and Venus look closest together?

Melissa: Its tonight and tomorrow night.

Mary: How much longer will the planets be visible like this?

Melissa: About another week or so, then Jupiter gets lost in the glare of the sun.

Dcrand: Only thing better would be a ISS pass now!

Melissa: That would be really great -- it's so easy to see. Very bright.

Indah_Huegele: Why is the earth's atmosphere blue?

Melissa: It's because the red light gets scattered away by the molecules in the Earth's atmosphere.

Fncquotes: What's the 2nd largest planet in our solar system (other than earth of course)?

Melissa: It's Saturn.

Moderator Janet: Keep your questions coming! Hope you are enjoying the Ustream feed.

Indah_Huegele: Last Thursday was a new moon, does the absence of light reflected by the moon help see the planets more clearly?

Melissa: Yes, you're right, it does.

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Patb: at which address can we send you a pie, as a thanks you gift?

Melissa: Just being here is a gift -- thanks for your questions. :)

Jazzysan: Since Io is so cold, how is it so volcanically active and how long would its lava stay molten at the surface?

Melissa: It's because of Jupiter's strong tides, and the lava cools quickly.

AndrewLVKS: What causes the little mountain in the middle of some craters on the moon? Is it a volcano?

Melissa: Very observant! It's a "backsplash" from the collision that causes the crater.

DonK: How much change of the earths orbit will this alighment cause?

Melissa: None at all -- it's only an apparent alignment.

diego_dandrea: Have we mapped all the surface of the moon?!

Melissa: Yes, but the poles have been mapped only fairly recently.

Chops: When the next conjunction will occur?

Melissa: It's in 2013, but it's not nearly as good as this one.

Rpa: What other planets are we able to see with the naked eye (at any time)?

Melissa: Mars -- in fact you can see it now if you go outside and look east. It's not quite as bright as Jupiter and Venus, but it's kind of reddish, so not too hard to pick out.

Melibergs: Do you think there's life inside Europa?

Melissa: It's not out of the question -- hopefully we can go find out someday.

Fncquotes: how much do you get paid Melissa:?

Melissa: You can look up federal salaries on the Internet. :)

brianSB: what kind of careers does NASA have for materials engineering Ph.D.s?

Melissa: A LOT! They help design spacecraft, rockets, the ISS, solar panels, etc. We have several materials science PHDs here at Marshall.

Sarah_L: What kind of telescope is more suited for observing the conjunctions? :)

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Melissa: A fairly small telescope is all that's needed.

TheLetter2: There was a time -- not that long ago -- that telescopic observations were the only way for Earthbound astronomers to learn about the planets. Now that we have planetary probes that can venture throughout the Solar System, gathering tremendous amounts of data, is there still anything we can learn from a telescopic observation such as the one we're seeing tonight?

Moderator Janet: Earth bound telescopes offer a larger field of view than a probe would 'see'.

Kayce: What's the really big flat / smooth part of the moon called?

Melissa: The maria -- that's Latin for sea. Even though they're not liquid water, they're solidified lava, which is why they're smooth.

emc2010: Where is the telescope through which we are viewing the live feed from located?

Melissa: It's at Marshall Space Flight Center in Huntsville, Ala.

Enim: What do you mean by aligned?

Melissa: They look close together.

Melissa: Yay! Look at the video feed everyone! You can see Jupiter's moon Ganymede at 4:00 to the lower right side of Jupiter. It's just a small dot. Ganymede is Jupiter's largest moon, bigger than Mercury and almost as big as Mars.

Melissa: Now look at the feed -- upper left is Io, the volcanically active moon of Jupiter.

Melissa: The bands of Jupiter are also flickering in and out on the current view.

Coloradoscottie: I have read that Jupiter's Great Red Spot was larger when first recorded 150 years ago, is there a projected end to the storm?

Melissa: It's about the same size now as then Galileo discovered it, about 400 years ago.

Mary: Is this the side of the moon that we landed on?

Melissa: Yes, you're right -- it is.

XtianDG: do we get to see mars like this at some time also? if so does it have a red glow?

Melissa: You can see it off in the East with the naked eye, and yes, it's reddish -- not as bright as Jupiter and Venus.

Melissa: Ganymede is back in the video feed, lower right corner, just a small dot. (Yay, astronomers!!!)

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Kayce: Jovian... that means it's a gas planet, right...?

Melissa: Yes, that's correct.

Blah: Is astronomy a good-paying field?

Melissa: It's not too bad -- I can't complain.

Blah: How close is Venus to Earth?

Melissa: About 40 million miles average -- varies from about 28 million to about 120 million.

Gustavo.S: 66 m o o ns?

Melissa: Yes, 66 confirmed. It probably has more. A lot of those are VERY small -- essentially big rocks.

Patb: You said Jupiter was made out of gas, hydrogen, why does it have this color and look "solid" ?

Melissa: It has trace elements in the atmosphere that cause the color. We don't actually know exactly what those trace elements are.

nishant_chandolia: will our galaxy collide with Andromeda galaxy in the next million years?

Melissa: No, no collision.

nishant_chandolia: What do we need to have a great career as a space researcher? I always dream to be the best space researcher in the world.....and I need your guidance on this topic

Melissa: Get a good solid education -- it helps to have a good math background.

Vanel: I'm sorry - I meant how far away from Earth is Jupiter tonight?

Moderator Janet: Not exactly sure tonight - however it varies from 28 to 120 million miles away.

Erinm: Seeing that Venus is much, much closer to the sun than Jupiter, can you describe their actual positions in relation to the sun that makes them look close together tonight?

Melissa: Imagine we're looking toward the sun. Venus is off to the left of the sun. Jupiter's orbit is taking it almost around behind the sun, and so as you look toward them, they look close together. These alignments happen because everything in the solar system is on the same plane -- in essence, like they're all on the same flat dinner plate.

MorningLightMountain: Would it be possible to set up a human habitat on Venus?

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Melissa: Very challenging because it's SO hot on the surface -- almost 900 degrees. Very hard for instruments to operate.

nishant_chandolia: Do aliens really exist in this vast universe?:-)

Melissa: Who knows? Let's go look. :)

Patb: Do you think there is other life somewhere? Not human shaped, but micro life like bug?

Melissa: My instincts tell me there is probably life elsewhere in the Universe.

Erinm: 890 degrees??? There goes that vacation. I didn't even like the heat in Mexico.

Melissa: This would be a little warmer. :)

Mary: The Jovian planets are made of gases and do not have a solid core or surface, right?

Melissa: We think they have a small solid core -- no solid surface.

Blah: When is the next time this will happen?

Melissa: There will be another one next year, but not as good as this one.

diego_dandrea: thanks a lot for the heads up! I'll work hard to catch up with you guys!

Melissa: Fantastic. :)

Blah: When will Juno get to Jupiter?

Melissa: It goes into orbit around Jupiter in Aug. 2016.

Nina: Is it true that Earth used to have 2 moons, they collided, and the one we have is the smaller one?

Melissa: That's not the current best theory. The current theory holds that a collision between the Earth and an asteroid caused a big "backsplash" that then condensed into the moon.

ChrisP: Why is Venus hotter than Mercury, since it is further away from the sun?

Melissa: Mercury is actually hotter than Venus. Its surface temperature in daytime is 1130 F, and Venus is around 900 F.

GuitarGuy94: I plan to take a course on Astronomy in college soon. Should it matter that I don't do so well with chemistry?

Melissa: It's not absolutely critical - math is probably more critical. Good luck. :)

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Dcrand: Can this alignment be seen by the Astronauts aboard the ISS?

Melissa: Yes, they should be able to.

ChrisP: What type of telescope is nasa using on this feed? Could the amateur sky watcher see it this well through their telescope?

Janet: Telescope being used tonight is a 14 inch Schmidt- Cassegrain. Yes, an amateur could see it through a telescope. Also, visible with naked eye at sunset. Should be visible tomorrow night as well.

diego_dandrea: what about earth-like planets!? are there any sign of life on them?! (bacteria and such)?!

Melissa: We can't tell yet. Hopefully in the not-too-distant future we'll be able to tell.

Patb: Can we register to a newsletter to know when there is more live chat?

Moderator Janet: Check this link: <http://www.nasa.gov/connect/chat/index.html>

Kayce: Holy smokes, 66 moons! On average, what size are they compared to our moon... or even earth?

Melissa: The four largest are similar in size to our moon to significantly larger. The smallest are 10s of meters -- or just a few miles across.

Enim: Jupiter isn't the largest in the sky, Venus appears much brighter ergo larger.

Moderator Janet: That is correct!

Mary: We are sending another rover to Mars. What is the temp there?

Melissa: Ranges from warmest 81 degrees to coldest of -225 degrees a common value used is -67 degrees F.

AndrewLVKS: When I look at Jupiter through the telescope I can see three or four bright objects near it. Are these moons or stars in the distance?

Melissa: Those are Jupiter's largest moons. We know tonight we can see Io and Ganymede on opposite sides of Jupiter.

Mary: Its wonderful to know what appears so brightly in the sky over head.

Moderator Janet: Thanks - we enjoy watching the sky and having our experts share their knowledge!

Gustavo.S: mercury is not the most hottest planet?

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Melissa: Mercury IS the hottest planet -- up to almost 1,200 degrees F,

Srco: it's very pretty tonight since the moon joined the dance!

Moderator Janet: Yes, it is quite beautiful!

Hot_Tin: any reports from the venusians about this even ? :P

Melissa: Hahaha! We haven't gotten anything, have you? :)

Missioncontrol: I use Google Sky on my Android phone, it's a great tool to use when star gazing.

Moderator Janet: Yes, we love smartphones and their helpful apps!

Nicholsong: Melissa:, so we're looking past Venus (on the outside of its orbit) toward Jupiter, thus the partial v full disk?

Melissa: Yes, Venus is the partial disk. Very good!

GuitarGuy94: is this event visible to the naked eye?

Melissa: Yes, walk outside within a couple of hours after sunset and look west for the two brightest things in the sky.

Time: how long does it take for a spacecraft to reach Jupiter?

Moderator Janet: Juno was launched last year and will reach Jupiter in August 2016. So, 5 years!

Scooby_Doo: Is it legal to be in public with your naked eye?

Melissa: It is in Huntsville. :)

Mary: gosh, I was hoping for the chat. It would be great to hear the voices from all around the globe. What a tremendous opportunity to make global connections. I think this is great.

Melissa: I agree -- that would be very fun. We'll look into that for future chats.

Melissa: Look at the video feed! That's a view through the telescope finder -- Jupiter and Io.

Dvsachs: where are the two spacecraft going that have left the solar system?

Melissa: Out into the unknown. Hopefully we'll discover something totally unexpected. Eventually they'll lose power and we'll lose communication.

Kayce: Venus, lovely! What's the surface like....? Looks pretty smooth here, but is that just the atmosphere we're seeing?

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Melissa: Yes, that's just the atmosphere. It has a very thick atmosphere, and you can't really see the surface at wavelengths visible to the eye from Earth.

Patb: It would be cool to see the space station on live video like this!

Moderator Janet: Stay tuned to our chats this year. We followed a fly over of space station last summer! We love watching station fly over :)

Melissa: Video feed -- that's actually the moon and Jupiter right now.

Chops: How the information is sent back to Earth from the spacecraft?

Melissa: It's radio.

Kinnally: beautiful view here in Huntsville... very clear tonight

Melissa: Yes, we were lucky the clouds earlier have evaporated.

Liz: Thanks for showing the live feed for those of us in areas where the weather isn't permitting us to see this conjunction!

Melissa: You're very welcome - we have good weather here.

Astroboy: Aren't there total 4 of them that left the solar system, atleast crossed pluto alongside Voyagers?

Melissa: Yes, that's true There are actually four that have left the solar system.

Stingray: Where is this telescope located?

Melissa: In Huntsville, Alabama.

Kayce: Oh wow, when is the Pluto spacecraft set to arrive? I know it's supposed to take Juno 5-ish years to get there, I imagine Pluto would be much much longer.

Melissa: It will arrive in 2015.

Melissa: Also, we'll post some links to more information about spacecraft that have left the solar system when we post the chat transcript next week.

Melissa: Look at the feed -- all three of our bright bodies are in the view right now!!!

Vividdemise: Why so blurry?

Melissa: Due to the Earth's atmosphere.

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diego_dandrea: what's the next big challenge to you?! Like the biggest unanswered question?

Melissa: Is there life anywhere else in the solar system is my biggest question right now -- like on Mars or Europa.

NickB: I think you made a mistake earlier. I think it's that the red light that scatters the least, which is why the sun looks red/orange when it sets, the blue light scatters the most making the sky look blue.

Melissa: Thank you! Yes, that is correct, and you're right!

Burnme: Ganymede!! Just think, if Jupiter wasn't such a large planet our solar system could have easily have 3-5 new planets

Melissa: Yes, that's right!

Gustavo.S: how hot is Jupiter?

Melissa: The tops of the clouds on Jupiter are about -95 degrees F.

Kayce: I don't see the barged spot on Jupiter that we could see a few months ago... is that due to rotation of the planet?

Melissa: Yes, it's due to rotation, and it's on the back side right now.

Jfriend: What is causing the flickering of Jupiter's bands?

Melissa: Earth's atmosphere,

Morkfromork: i keep hearing about a transit of Venus in december... what is a transit?

Melissa: It's when Venus will cross in front of the sun, casting a shadow so we can see a dark spot from Earth.

Kayce: Jupiter again -- which moon are we looking at now?

Melissa: The view is changing, but I believe that was Ganymede.

Patb: All I ever seen in the sky is star, is there a trick to see planet?

Melissa: A planet looks like a very bright star without a telescope.

MorningLightMountain: Thank you very much Melissa: for answering questions :) I'm going to have to go to bed, but I'll be looking at the sky tomorrow night again!

Melissa: You're very welcome, and thank you for being here. :) Enjoy the view tomorrow night.

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Kayce: Is the telescope being used now sufficient to catch a glimpse of the two GRAIL satellites orbiting the moon, or are they way too small to be seen even at this magnification?

Melissa: I believe they're too small to be seen by a telescope from Earth.

Joe: Hi Melissa: , does Venus have a surface?

Melissa: Yes, it has a rocky surface and probably extinct volcanoes.

Amira: Why aren't Venus and Jupiter a reddish, orangish colour?

Melissa: Just because of their clouds -- they're whitish in appearance.

km29: Hi Melissa:! Just wondering, which planets will align next for conjunction?

Melissa: Jupiter and Venus align beginning in May of next year.

Macros: Do you have control of the Telescope or are there others you may be in contact with? I would like to see the full picture of the conjunction. Although seeing the Moons of Jupiter is awesome!

Melissa: We're rotating around so we can get all views. :)

diego_dandrea: Does Jupiter's got rings too?!

Melissa: Yes, it does. They're not nearly as big or easy to see as Saturn's, but they are there.

Melissa: On the video feed -- vote for your favorite planet. I've cast my vote. :)

Mary: The length of time it would get there is another issue. Is Venus closer than Mars? It's taking the rover that's on its way now until August to get Mars and it launched months ago.

Melissa: On average, Mars is further away than Venus, but depending on the relative location of Earth, Venus, or Mars, Mars CAN be closer at times than Venus.

Wytecastl: Has it been determined whether the mass of the universe is great enough for expansion to stop and reverse, or will expansion slow but never completely stop?

Melissa: The best theory today is that the expansion will not stop and reverse.

Astroboy: What is the interval to get 28 to 28 million miles?

Melissa: Its many months at minimum -- so it takes almost a year to get to Mars.

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Pharoah: Thanks Dr. McGrath and crew, now I can say a real astrophysicist answered 2 of my questions, you guys should be the real celebrities we praise and aspire to be:) This was my first NASA chat, loved it, looking forward to more, bye:)

Melissa: Thanks for being here! See you in future chats, and its fun for me, too!

NerdHerd: would you be able to see Earth from Venus and Jupiter right now?

Melissa: Yes, definitely.

RBaez: Does Jupiter has a solid center?

Melissa: Yes, we think it does. The Juno spacecraft on its way to Jupiter right now is intended to answer that question for sure.

KEITH12: 2.1 MAGNITUDE?? WHATS THAT MEANS?

Melissa: That's the brightness system that's used in astronomy.

mwilkinson3: Just went back to look at my photos... I actually got a faint trail of light that is Ganymede in one shot!

Melissa: That's so great -- Yay! :)

GuitarGuy94: which would be hotter at its core Mercury or Venus?

Melissa: Probably Venus because it's more massive.

RBaez: Are humans able to survive the sand storms in mars?-Alejandro

Melissa: We've never tried -- no humans have gone there yet. We'd have to plan for that when we go.

RBaez: How long is a day in Jupiter? - Alejandro

Melissa: 10 Earth hours.

KernelPanic: Good evening. Can this be seen from across the pond, in the UK?

Melissa: Yes, within a few hours after sunset.

Kayce: A geeky question for the telescope experts... when we're looking at the moons of Jupiter, the planet itself is very bright and blown out / over-exposed, and when Jupiter is exposed properly the moons aren't visible. Is there some sort of aperture to adjust how much light is being let in?

Moderator Janet: You are exactly right!

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JP: Awesome view from Miami, thank you Melissa: and Janet

Melissa: Hello Miami! Glad you're getting a good view. :)

nishant_chandolia: yeah, we too are enjoying the answers you are sending

Moderator Janet: Glad you are enjoying the chat!

Indah_Huegele: What is Jupiter's smallest moon? And how big is it?

Melissa: It's about 10 miles in diameter, and it's called Leda.

Danistone: hi from Spain!

Moderator Janet: Hi from Huntsville, AL!

Shavi: Does this conjunction happen every year?

Melissa: No, not every year, and this one is particularly bright.

KEITH12: REALLY CLOUDY HERE IN BOSTON MA 8-(

Moderator Janet: Sorry :(We had a few clouds earlier in the day! Hope you are enjoying the Ustream feed.

Astroboy: Why can't we see the stars in the background?

Melissa: The field of view is very small.

Joe: What fuel do rockets use?

Melissa: They use both solid and liquid. For liquid they use hydrogen, oxygen and methane. They also use kerosene.

Hehateme: I can see them both perfectly from my house without a telescope

Melissa: Great!

Glyn: Melissa:, will we see it from up here in Vancouver Canada in a few hours?

Moderator Janet: Yes, should be viewable - just after sunset.

Mary: It's great to be able to "see" what I've only read about or saw pictures of. I can actually see Jupiter's bands and IO and Ganymede. How great is that?

Melissa: How great is that? Very cool. :)

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km29: Are there any projects that are currently investigating the "core" composition of Jupiter?

Melissa: Yes, the Juno mission on its way and arriving in 2016 is intended specifically to study Jupiter's interior.

Melissa: Quick, look at the video feed. Behold Mars!

Dvsachs: why is math so critical to astronomy?

Melissa: It's because everything we do involves calculations!

Mike: If you've seen the recent Hubble shots and the ultra deep image of the southern hemisphere, how could you doubt that among all those galaxies there's another creature looking up and wondering

Melissa: Yes -- I have to agree.

Scooby_Doo: Will one of you marry me? I like smart women.

Melissa: I'm married to a smart guy for 31 years now -- but thank you. :)

Pjeline: can Hubble see Jupiter or is it too close for it to focus on?

Melissa: Jupiter is too close to the sun right now for Hubble to observe it.

an_aussie: Will we see this tonight in Sydney, AUS?

Melissa: Yes, you should be able to, up until a couple of hours after sunset.

kevLar: how "rare" or common is this alignment?

Melissa: One this good happens every few years, but alignments happen pretty much every year.

Mary: what's on the screen now

Moderator Janet: The lovely red planet - Mars.

Indah_Huegele: Does Venus contain any water (vapor)?

Melissa: Yes, it contains some, but not a lot. It's mostly sulfur dioxide in the atmosphere.

Tonio: HI Melissa:, so i understand that the red spot in junpiter is a storm, right?

Melissa: Yes, it's like a GIGANTIC hurricane.

chall8406: So, when do you think the next conjunction will be for the Jupiter and Venus to come?

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Moderator Janet: The next conjunction of Jupiter and Venus is May of 2013.

Kayce: We have a transit at the beginning of June I think too, right?

Melissa: Yes, the Venus transit will be June 5-6, 2012.

jd-wa: when will Saturn be in closest proximity to Earth again?

Melissa: Saturn is closest in mid-April.

Mike: Will you get a shot of Saturn rising in the east?

Melissa: We can check with our astronomers -- we'll try.

Rw: what size telescope is being used? also is it a reflector or refractor

Melissa: It's a 14" reflector.

Dgsg: What happens to the debris of an asteroid impact on the moon? Does it settle down onto the surface?

Moderator Janet: It would either be obliterated or come back down to the surface and make secondary impact.

Nati: Does it rain on Jupiter?

Melissa: Probably not.

Brutus: What telescope is showing the video above?

Melissa: The 14" reflector that's located at Marshall Space Flight Center in Huntsville, Ala.

Kim: It's really clear here in MO tonight, wish I had a telescope - so glad NASA is giving me a closer look. Loved the moon from a couple of hundred thousand miles away! Thanks!

Melissa: You are so welcome -- hello to Missouri!

Moderator Janet: About 5 minutes remaining in the chat. Prep those final questions!

sw123: do you have a link for the schedule of future webchats/live feeds like this?

Melissa: You can find them on www.nasa.gov/connect/chat/index.html. The next one we have to watch the skies will be an up all night chat to view the Lyrid meteors in April.

Mary: sulfur so does Venus smell like rotten eggs?

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Melissa: Yes, it probably does.

Indah_Huegele: How did jupiter's great red spot form?

Melissa: It's like a gigantic hurricane. Temperature gradients and winds combined to form our storms on Earth, and probably the same on Jupiter.

ChalmetteLA: I have heard that a saltwater ocean is believed to exist nearly 200 km below Ganymede's surface, sandwiched between layers of ice. Have there been any further conclusions to this theory?

Melissa: Yes, we think that's the case, but we don't know for sure. We need more spacecraft data.

Dazza_Gee_NZ: Can the Hubble telescope be used to view the moon?

Melissa: Yes, and it has been used -- and you should be able to access the images online. Just Google "Hubble moon."

km29: Do you have a specific line of math that you use most often in Astronomy (Calculus, Trig, etc)?

Melissa: Calculus, geometry, and algebra are the things I'd say I use the most.

Bash: If NASA had the funding this year, how long would it take for a manned missions to mars?

Melissa: It would be about 1-2 years to reach Mars from Earth.

RK: Why do planets appear in twelve zodiac constellations only?

Melissa: It's because they're confined to a single plane -- so they just appear to go around in a circle in the sky, crossing the same constellations.

Evolvtyon: Is it true that Jupiter as the biggest ocean of any planet in the solar system ?

Melissa: We think Jupiter's moons have oceans, but Jupiter is made of gas.

Indah_Huegele: What is a transit?

Melissa: It's when a planet crosses the face of the sun, as seen from Earth.

Indah_Huegele: How do you know if a celestial body is a moon?

Melissa: If it's orbiting a planet, then it's a moon.

Kayce: Bout time to wrap it up.... thank y'all (again!) so much for doing this!!

Melissa: You are very welcome!

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Oryx: Did any particular people in the world of astronomy/physics inspire you to seek your chosen career path?

Melissa: Yes, Carl Sagan was my biggest inspiration.

Kim: How did the recent solar flares affect the other planets?

Melissa: Great question. It depends if the planet is "in the line of fire" and just because we get that doesn't mean that another planet does. But...generally speaking, the planets closer to the sun -- Mercury, Venus -- will feel a much stronger impact, and the planets further away are less affected.

Macros: Thank you Melissa: and Janet for your awesome information! You guys ROCK!

Melissa: Thank you for being here -- we enjoyed it!

Moderator Janet: Once tonight's chat ends, the Ustream feed will continue to loop the observations made during chat.

RK: Why do planets appear in one imaginary circle through the horizon always

Melissa: They're all on a single plane, and they make a circle around the sky.

Moderator Janet: Final round of questions!

Indah_Huegele: How do you know if a celestial body is a planet?

Melissa: Very good question -- it's caused a lot of controversy in the science community. The International Astronomical Union says to be a planet, the body has to be spherical, orbit the sun, and have sufficiently large gravitational pull. So Pluto lost its designation as a planet because it doesn't have enough gravitational pull.

Bons: Not a question, but I just wanted to say thank you for providing such an awesome stream and for answering our questions! :)

Melissa: We appreciate you being here -- and we appreciate our telescope team VERY much -- they've done an amazing job tonight in bringing the planets into our stream.

Evolvtyon: but if it is composed of helium and hydrogen wouldn't pressures make hydrogen turn to liquid at some point ?

Melissa: Yes, that's probably true -- we think probably in a thin layer. (It may actually never be liquid, but metallic instead.)

Csrd: hello from mexico city

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Melissa: Hello, Mexico City! Thanks for being here.

chall8406: I know planets have an elliptical orbit, but do they travel up and down in varying amounts also along the same set path?

Melissa: Only very small amounts up and down, except for Pluto -- but of course, it's not really a planet.

Sampson: What kind of telescope would you recommend for amateur stargazing?

Melissa: A small reflector, something like 6"-8".

Doug_O.: What is your take on dark matter?

Melissa: It's very mysterious. :) That's why I study planets!

Stingray: Thanks from Colombia, nice stream

Melissa: Thank you, Colombia -- appreciate your participation!

Kim: Are the astronauts on the space station recording images of Jupiter and Mars tonight, too?

Melissa: We're not sure, but they very well may be.

Melissa: Thank you so much for all the great questions! I had a great time. On the Ustream feed, there will be a recorded version of tonight's observation that you can watch if you missed anything during the chat. Have a great evening, and hope to talk to you again soon! :)