[21:06] * BrianQ (n=fn-javac@72.146.0.187) has joined #gemology

[21:06] <Crystal2> hi Brian

[21:06] <doos> hi BrianQ

[21:06] <DragonStek> hi brian

[21:06] <BrianQ> hi, wow, hi everybody

[21:06] <Margo> Hi Brian

[21:06] <myname> I'll be myname (JB)

[21:06] <@Keirkof> full class teach' :)

[21:07] <BrianQ> heh, I guess so... now if only I had something to teach ;)

[21:07] <Crystal2> LOL

[21:07] <@Spauwe> ghehe

[21:07] <myname> I've got a couple questions

[21:07] <BrianQ> sure, ok...

[21:07] <@Spauwe> yeah questions...

[21:08] <myname> Be patient, slow typer

[21:09] <myname> I'm still having trouble finding reference to grain boundaries in mono crystalline minerals

[21:09] <@Spauwe> cause there aren’t any probably

[21:09] <BrianQ> oh yes, I think for sure it is probably the wrong name for what happens in single crystals.

[21:09] <myname> only in purposely grown synthetics

[21:10] <Margo> nothing in photoatlas with ony name suggestion...

[21:10] <myname> polycrystalline synthetics by Czochralski

[21:10] <@Spauwe> Brian this is very important to our guests from the ISG since their "leader" has adopted the term after not attending your chat last week

[21:10] <myname> method

[21:10] <@Spauwe> :)

[21:11] <Margo> not with the dark rust colored diffusion giving such different colours

[21:11] <BrianQ> well, again, we have to realize...

[21:11] <BrianQ> I am as bad a geologist as I am a gemologist.

[21:11] <BrianQ> I am just trying to make the connection between the two.

[21:12] <BrianQ> Also remember, in geology there is more than one point of view...

[21:13] <BrianQ> One is the empirical view, where only the measureable results are worth describing.

[21:13] <BrianQ> And the other is the atomist view, where the macroscopic results occur because of microscopic processes that we may or may not be able to identify.

[21:14] <BrianQ> In the larger picture, I find this viewpoint reflected in for example the difference between "thermodynamics" and "statistical mechanics".

[21:15] <BrianQ> But, ahem, I digress...

[21:15] <@Spauwe> :)

[21:16] <BrianQ> I do think the way geologists use "grain boundary" is as a description of the border between separate crystals of the same material.

[21:16] <@Spauwe> as in a polycrystalline substance...

[21:16] <myname> What I was trying to sort out is, Does Mr. James description have any truthful relevance

[21:16] <BrianQ> And the geologists I know, that's all they care about, because they study granites and water diffusion and rocks.

[21:17] <BrianQ> On the other hand, myname, one can find somewhat equivalent features in single crystals...

[21:17] <myname> defects yes

[21:18] <BrianQ> yes... extended defects, in a way...

[21:18] <myname> then you would have to consider atoms as grains, no?

[21:19] <myname> or unit cells, excuse me

[21:20] <myname> unit cells as grains

[21:20] <BrianQ> um... I think about how these defects can extend themselves through a single crystal and then why they behave as a pathway for diffusion.

[21:21] <BrianQ> Just thinking about how a crystal grows... probably you guys have much more information about the process than I do!

[21:21] <BrianQ> But you know, maybe some unit cell assembles accidentally in a melt, yes?

[21:21] <doos> a molten mass that gradually cools

[21:22] <BrianQ> Yes, you know, but what are the microscopic steps... I am an atomist at heart.

[21:22] <@Spauwe> single crystals as a 'collision between two or more elements that 'mate' to bond

[21:23] <@Spauwe> then gradually more and more join the club

[21:23] <BrianQ> You get that first single unit cell, and then other cells begin to acrete around the first, perhaps?

[21:23] <myname> well if they lose there symetrical order, I suppose it would create some kind of boundaries

[21:23] <myname> that's where semantics would come in. What to call these boundaries

[21:24] <myname> Defects or grain boundaries

[21:24] <doos> JB, the boundaries should be seen as the conchoilin cement that holds aragonite plates in pearls together

[21:24] <@Spauwe> yeah but regularly enough to create a pathway for elements as big as transition elements?

01[21:25] <@Spauwe> I'm not buying it

[21:25] <doos> no such thing going on in crystalline substances

[21:25] <myname> yes, would the cement be amorphous?

[21:25] <doos> in pearl, yea

[21:25] <doos> or atleast organic

[21:26] <@Spauwe> with feldspar I can see how the twinning creates irregularities that may act as a path way but there is no such thing going on in tourmaline

[21:26] <BrianQ> Here's an interesting point I came across a couple times, but I forget where... probably a google book search... where you can read only enough to make you dangerous.

[21:26] <doos> indeed Spauwe

[21:27] <BrianQ> Every crystalline structure has a certain energy associated with it, but for each such combinations of atoms, there exists a lower-energy state.

[21:28] <BrianQ> like I said... just enough information to make one dangerous...

[21:28] <myname> so many amorphous boundaries should create an unusual polariscope reaction, like with ADR maybe

[21:29] <BrianQ> I don't know that they are amorphous boundaries... they may arise sort of systematically

[21:30] <@Spauwe> for a crystal to be of gem quality)transparent) it has to be pretty damn near perfect

[21:30] <BrianQ> Most gems couldn't be too perfect, or else they'd all be colorless.

[21:31] <@Spauwe> understood and agreed

[21:32] <BrianQ> So these ... um... "extended defect pathways" do not have to be numerous, just as the color centers themselves don't have to be numerous.

[21:32] <BrianQ> So they might not show up readily in macroscopic observations.

[21:33] <@Spauwe> but what kind of defects would you suggest being present in a tourmaline crystal that are so regular that they will act as a pathway for bigger elements?

[21:33] <myname> Anything bigger than the element?

[21:33] <BrianQ> No I don't think so...

[21:33] <@Spauwe> it all comes down to the right chemistry

[21:34] <BrianQ> I think we are talking dislocations smaller than the unit cell.

[21:34] <@Spauwe> it has to be 'willing' No?

[21:34] <BrianQ> That too... not everything would have the key to enter.

[21:35] <@Spauwe> now... would such a process occur under normal pressure and moderate temperatures?

[21:35] <@Spauwe> (i know the answer: yes, if you allow enough time to pass)

[21:35] <BrianQ> of course grasshopper!

[21:36] <@Spauwe> but at a acceptable speed? I need those blue tourmalines ready before Tuscon!

[21:36] <BrianQ> I am still thinking though, why an initial dislocation of a cell would create a pathway, and why this IS a pathway that something could "fast" diffuse through.

[21:37] <Margo> Ah, with patience yoy shall have them (with enough pressure and temperture)

[21:37] <BrianQ> If the atoms in a unit cell are linked up (um, you know, bonding with) atoms in the next unit cell and so on...

[21:38] <BrianQ> They are pretty much occupied and happy...

[21:38] <myname> wouldn't the grain boundaries be composed of elements outside of but chemically attached to the unit cells?

[21:39] <BrianQ> Yes...

[21:39] <doos> maybe we should let Brian teach about the things he knows best

[21:40] <BrianQ> Hah! definitely not this, eh!! :) But it is fun to think about.

[21:40] <myname> yes just thinking

[21:40] <@Spauwe> ow... (stamping feet) come on! teach us how to bake gemstones Brian

[21:40] <doos> let the thinking to jim bob

[21:40] <BrianQ> Oh, that part is not so difficult.

[21:40] <myname> lol

[21:40] <myname> that's dangerous

[21:41] <BrianQ> baking is easy, you just get the recipe and the tools.

[21:41] <@Spauwe> you wish...

[21:41] <BrianQ> The GIA published some recipes for the Be-sapphires...

[21:42] <@Spauwe> a wee bit more to it, not always so easily explained either, yeah and some will turn out cool and others will go all wrong on you

[21:42] <BrianQ> True... but experimentalists are used to that.

[21:42] <BrianQ> That is part of the job.

[21:43] <@Spauwe> yeah but I'm bringing in my mine run stuff to your shop and I get angry when you muck it up

[21:44] <BrianQ> um, maybe you would if your stuff was worthless to begin with, but just might ... just maybe ... be worth something after enough trial and effort.

[21:45] <@Spauwe> exactly

[21:45] <@Spauwe> now the thing with tourmaline is that it's not a very heatable stone

[21:45] <myname> According to RJ it sells for the same as the crappy stuff

[21:45] <@Spauwe> with just normal moderate temp treatments it turns all ways, cracks, shits itself etc already

[21:45] <myname> whats the point then?

[21:46] <BrianQ> Before we get to tourmaline, we should first see what can be learned from the sapphire and labradorite examples.

[21:46] <@Spauwe> aha a plan! like it

[21:46] <doos> myname, RJ is full of shit as I parroted for 3 years now

[21:46] <@Spauwe> listening

[21:46] <BrianQ> You know, the GIA report on the sapphire was very good, actually.

[21:46] <myname> I knw Doos

[21:46] <BrianQ> http://lgdl.gia.edu/pdfs/su03a1.pdf

[21:47] <BrianQ> That tells you how to spot it, how to do it yourself, all in the detail one expects of a journal article.

[21:47] <BrianQ> It even tells you a good dose of history on the subject.

[21:49] <BrianQ> I think it suggests the diffusion is "lattice diffusion" or "volume diffusion", but it doesn't go into detail on that...

[21:49] <myname> Yes the BE issue is understood except for the natural occurences

[21:50] <myname> as I understand it

[21:50] <BrianQ> ...because maybe it could be a "fast diffusion" method, but how would they know?

[21:50] <BrianQ> Now... what has been put out to the public about the labro... um, however you spell it?

[21:51] <BrianQ> One press release, as far as I can tell.

[21:51] <@Spauwe> correct

[21:51] <BrianQ> Maybe we just have to wait for the details, maybe they just want to warn...

[21:51] <BrianQ> but science isn't usually done by press release.

[21:52] <@Spauwe> somebody tell Bobbi

[21:52] <BrianQ> And when I read that release, more and more questions keep coming to mind.

[21:52] <BrianQ> By the way, for the record...

[21:52] <BrianQ> http://www.jckonline.com/article/CA6613857.html

[21:53] <BrianQ> is the press release I was thinking of...

[21:53] <@Spauwe> yep

[21:53] <myname> The problem with the andesine issue is, that can't differentiate a diffused from a naturally diffused

[21:53] <myname> despite what one person claims

[21:53] <BrianQ> No, but the article suggests there exists clues...

[21:54] <BrianQ> The problem is the article doesn't tell us what the clues are!

[21:54] <BrianQ> Let's forget about the fact that the article doesn't actually tell one how to do this man-made diffusion...

[21:55] <BrianQ> Let's zero in on one interesting point mentioned in...

[21:55] <BrianQ> paragraph three.

[21:56] <BrianQ> Rossman et al determined how to identify heat treatment.

[21:56] <BrianQ> have you guys looked at this stuff?

[21:57] <doos> yes

[21:57] <BrianQ> You can look at a sapphire and know if it has been heated...

[21:57] <@Spauwe> not me

[21:57] <@Spauwe> that I can

[21:58] * Margo (n=fn-javac@ppp-70-250-119-110.dsl.hstntx.swbell.net) Quit ("Java user signed off"□)

[21:58] <BrianQ> And I'm sure many people with those skills have looked at andesine, but no one says...

[21:58] <@Spauwe> but no clue about feldspar (unless I see a molten crystallite in there)

[21:58] <BrianQ> look this indicates heat treatment.

[21:59] <BrianQ> Now here's what I'd suppose, if I had to deal with this stuff...

[22:00] * Margo (n=fn-javac@ppp-70-250-119-110.dsl.hstntx.swbell.net) has joined #gemology

[22:00] <BrianQ> If I knew the stuff had been heated, I'd suppose it was to do this diffusion to improve color.

[22:00] <BrianQ> Since it doesn't seem that heating alone does any improvement.

[22:00] <BrianQ> unlike the sapphire case.

[22:01] <BrianQ> So why didn't they describe how to detect heating of this material?

[22:01] <@Spauwe> correct, but until Rossman wants to share his observations we can't

[22:01] <@Spauwe> dunno

[22:01] <BrianQ> yep, that is true.

[22:01] <@Spauwe> many things unanswered

[22:01] <doos> BrianQ, because they are still investigating

[22:01] <BrianQ> Yep, but then, why go write a press release?

[22:02] <BrianQ> if they are still investigating

[22:02] <doos> nobody wrote a press release

[22:02] <@Spauwe> a well known treater who has his nose right into bake-a-rock avenue in Thailand says it is done differently again

[22:03] <@Spauwe> at this point there is zero certainty about anything related... the only thing we know now is that it is possible

[22:03] <@Spauwe> since we're talking this article

[22:03] <doos> Spauwe, that same treater warned jim bob not to publish his premature and wrong conclusions

[22:03] <@Spauwe> “Diffusion happens very rapidly down these diffusion pipes. You can deeply color to great depths in this material in a limited amount of time. Hundreds of hours. If it weren’t for these pipes, it would be tens of thousands of hours to do that.”

[22:03] <@Spauwe> the above being a quote

[22:04] <@Spauwe> no pipes (coming from some very 'unique' twinning) no rapid diffusion

[22:04] <@Spauwe> why no grain boundaries there?

[22:05] <myname> it's not polycrystalline

[22:05] * GemGuest84 (n=fn-javac@97.72.208.16) has joined #gemology

[22:05] <@Spauwe> exactly

[22:06] <myname> neither is tourmaline

[22:06] <myname> that is why I was pressing for proper symantics

[22:07] <@Spauwe> yesh

[22:07] <myname> if there is such a thing in this case

[22:07] <@Spauwe> Bobbi liked the term

[22:07] <@Spauwe> went right to bed with it

[22:07] <BrianQ> I think the "pipes" in single crystals would be labelled extended defects.

[22:07] <myname> does he know what it means is the question

02[22:08] * GemGuest84 (n=fn-javac@97.72.208.16) Quit (Client Quit)

[22:08] <@Spauwe> there is a few people here that will see or speak him soon

[22:08] <BrianQ> And so the pipes arise under different circumstances..

[22:08] <BrianQ> but... they do similar jobs for similar reasons...

[22:10] <myname> create diffusion pathways in feldspar

[22:10] <BrianQ> The walls of these pipes are incompletely bonded atoms, making them somewhat chemically active.

[22:10] <@Spauwe> copy

[22:11] <BrianQ> As JB says, the grain boundaries can be filled with detritus...

[22:11] <BrianQ> ...because of this chemical activity.

[22:14] <BrianQ> We see microscope pictures of these grain boundary things.

[22:14] <BrianQ> But I think these extended defects are not photographic, because they are too small.

[22:15] <BrianQ> And not everything fills in these defects... is a guess.

[22:15] <BrianQ> *waving blindly* :)

[22:15] <BrianQ> these "pipes" would be much more chemically selective?

[22:16] <@Spauwe> i sthat a question?

[22:16] <BrianQ> No, it is me waving around blindly.

[22:17] <@Spauwe> if there's unbonded atoms there there is energy for the grabbing

[22:18] <@Keirkof> why wouldn't the visible inclusions (fibres, trichites etc) act as such pipes?

[22:18] <@Spauwe> but the problem I have with the idea that every single crystal has 'pathways' due to ever present extended defects is that nature doesn't show us them either

[22:18] <@Spauwe> especially if it's 'fast diffusion'

[22:21] <BrianQ> No... from what little we read, this labradorite has this particular pathway available for copper diffusion

[22:21] <@Spauwe> yes

[22:22] <BrianQ> and so as it can happen in nature on a long time scale, it can also happen man-made at high temp on a short time scale.

[22:22] <BrianQ> We can roughly guess the temperature being around the melting point of the copper... 1100 C, I think.

[22:23] <BrianQ> Just as with Be in sapphire occurs somewhere around the melting point of Be, I think 1300 C/

[22:24] <BrianQ> Now maybe some other select gem material has a similar pathway for a similar single metal...

[22:24] <@Spauwe> maybe...

[22:24] <BrianQ> Maybe tourmaline does have this special pathway for copper, maybe it doesn't.

[22:25] <@Spauwe> it is suggested that it's Fe and Mn that is diffused into tourmaline

[22:25] <myname> or iron or manganese apparently

[22:25] <@Spauwe> (at least this week, a month ago it was copper)

[22:25] <BrianQ> Um... what are those guys melting temperatures>

[22:25] <BrianQ> ?

[22:25] <DragonStek> but tourmalines cant go above 700degrees celcius

[22:25] <BrianQ> the metal itself, that is.

[22:26] <BrianQ> yes, true Dragon.

[22:26] <@Spauwe> both higher then tourmaline indeed

[22:26] <BrianQ> But lots of metals melt at temps less than that.

[22:26] <BrianQ> mercury, for example ;)

[22:26] <@Spauwe> next weeks newsletter is forming here

[22:26] <BrianQ> Yep, I'm pretty sure Fe is up there

[22:27] <BrianQ> I don't know about Mn.

[22:27] <Gloribell> Melting point of iron 1535

[22:27] <BrianQ> ok, up there with copper and beryllium.

[22:28] <@Spauwe> 1244 for manganese

[22:28] <@Spauwe> 1246 second hit

[22:29] <myname> so you would have to be talking recrystalization for this to occur based on what we know about diffusuion thusfar

[22:29] <BrianQ> All indications are that for diffusion to occur in hundreds of hours, the temperatures have to be around the melting point of the metal to be diffused.

[22:30] <myname> or a very long process

[22:30] <BrianQ> The corundum and the lab-stuff melt at much higher temperatures than that being used in the metal diffusion

[22:31] <@Spauwe> Emmett was using Cu in solution I think... would that take the required temp down a bit?

[22:31] <myname> would pressure speed the process?

[22:32] <BrianQ> In a flux, perhaps, or in a solution.... It is not that the copper needs to be melted, exactly

[22:32] <BrianQ> It is the copper needs the energy it acquires at that sort of temperature.

[22:32] <BrianQ> A subtle difference.

[22:32] <@Spauwe> ok yep

[22:33] <@Spauwe> any way of giving it that energy without using to much heat?

[22:33] <BrianQ> Yes, I can think of ways....

[22:33] <BrianQ> that everything in the "oven" doesn't have to be at that temperature.

[22:34] <BrianQ> But the copper atoms will be at that temperature (temperature is sort of a measure of how much energy it has)

[22:34] <@Spauwe> yep

[22:34] <@Spauwe> how?

[22:35] <myname> how to cross the thermal barrier

[22:35] <BrianQ> Well, they are costly, compared to an oven

[22:35] <@Spauwe> exactly, we do want it cheap and feasable

[22:35] <@Spauwe> we are running a gem scam here, must be economically viable

[22:36] <BrianQ> I guess I'm not going to get to use my ion-sputter gun, then.

[22:36] <@Spauwe> ion-sputter gun :)

[22:36] <@Spauwe> sounds good

[22:36] <@Spauwe> next weeks newletter: part 4. the ion-sputter gun!

[22:37] <myname> still waiting for part III

[22:37] <@Spauwe> I lost count

[22:37] <BrianQ> part 3 of what?

[22:37] <DragonStek> cost of this ion sputter gun , we lost the cost efficiency

[22:37] <myname> the RJ chronicles

[22:38] <BrianQ> oh, the sputtering has to be done under high-vacuum, so it gets pricey.

[22:38] <DragonStek> i was joking sorry

[22:39] <BrianQ> there is always heating by induction, but the RF high power supplies for that are also industrially priced.

[22:40] <BrianQ> I looked at that once, when I foolishly thought I was going to play with copper vapor.

[22:41] <BrianQ> Again, if done in atmosphere, then the copper just burns instead of vaporizing :)

[22:41] <@Spauwe> so you want the matter you are diffusiong into a crystal nice and energetic... how about the crystal itself... I have this picture in my head of an atomic structure 'opening up' due to heating

[22:41] <@Spauwe> no need for that with pathways?

[22:42] <BrianQ> No, remember we looked at pictures of atoms last week?

[22:42] <@Spauwe> yesh

[22:43] <BrianQ> You cannot open up with the heating... you can tear the cells apart, but until that melting point, the cells are pretty much filled with atoms...

[22:43] <BrianQ> The atoms just bounce against each other more with the increased temperature.

[22:44] <@Spauwe> and so the probability of an Al ion being replaced with a Be ion increases with heating

[22:44] <BrianQ> Let's play a little thought experiment, a lock and a key...

[22:45] <BrianQ> Now, nine times out of ten, I insert the key into a lock and with a flick I unlatch the lock.

[22:46] <BrianQ> Why this happens is because of my guiding hand... I provide it with whatever energy is needed to enter the lock, and I provide the correct orientation for the key to enter.

[22:47] <BrianQ> Now, we could try to insert the key another way....

[22:47] <BrianQ> We could create a little cannon, stick the key down the barrel randomly and fire it at the lock.

[22:48] <BrianQ> If the cannon doesn't give the key enough energy to enter the lock, then really nothing at all is going to happen.

[22:48] <BrianQ> So we make sure we provide enough energy...

[22:49] <BrianQ> But the key might hit the top, or side of the lock, might completely miss the lock...

[22:49] <BrianQ> Also, the key might hit forward, backwards, sideways, all sorts of orientations that will not allow the key to enter.

[22:50] <BrianQ> This is kind of a picture of what is happening on the small scale... these atoms bouncing around.

[22:50] <BrianQ> if they have the right energy, they might get inside...

[22:50] <BrianQ> but probably not on the first bounce.

[22:50] <Gloribell> I just found an article that says iron rich tourmaline melts at 1725?

[22:50] * Gloribell (n=fn-javac@ip24-254-173-81.rn.hr.cox.net) Quit ("Java user signed off"□)

[22:50] <BrianQ> Ok Gloribell, then maybe it does.

[22:51] <BrianQ> That would make things seem a little more possible.

[22:52] <@Spauwe> A shame Gloribell isn't here no more

[22:52] <@Spauwe> you know what that iron rich tourmaline is called as well? Schorl

[22:52] <doos> molten into cyberspace

[22:53] <BrianQ> The black stuff, is that what that is?

[22:53] <@Spauwe> opaque black stuff

[22:53] <@Spauwe> yep

[22:53] <DragonStek> ok

[22:53] <@Spauwe> no way you are diffusing that ti a red

[22:53] <BrianQ> Now imagine you could change that stuff's color... talk about taking the worthless into the region of the worthwhile

[22:54] <myname> we are just guessing at what Jimbob is up to right now anyway

[22:54] <@Spauwe> too much imagination in this field already

[22:54] <DragonStek> did anyone attends his chat

[22:54] <@Spauwe> Margo or Crystal may have...

[22:54] * glorib (n=fn-javac@ip24-254-173-81.rn.hr.cox.net) has joined #gemology

[22:54] <BrianQ> Probably true, Tim.

[22:55] <@Spauwe> ah gloribell, I'll paste what is said in a different window for you

[22:55] <glorib> thanks

[22:55] <DragonStek> gloria did you attend his chat on this

[22:56] <glorib> whose chat on what?

[22:56] <DragonStek> JR s chat the other day

[22:56] <glorib> Who is JR?

[22:56] <@Spauwe> RJ

[22:56] <DragonStek> sorry rj

[22:57] <glorib> No

[22:57] <@Spauwe> Crystal?

[22:57] <@Spauwe> Margo?

[22:58] <doos> heh

[22:58] <myname> guess not

[22:58] <BrianQ> I have a question

[22:58] <doos> shoot

[22:58] <Margo> Just trying to figuire out if anyone knows what is going on with the new 'coloured' materials that have never seen the light of day before now...

[22:59] <BrianQ> Suppose some tourmaline is treated... what is the basic problem that causes?

[22:59] <@Spauwe> determination by me

[22:59] <myname> price and disclosure

[23:00] <myname> is always about the money

[23:00] <doos> BrianQ, price most probably .. but then again alot of the most coveted cu tourmalines are heat treated

[23:00] <DragonStek> isnt most tourmaline treated now , either to lighten or to darken

[23:00] <@Spauwe> can be irradiated as well

[23:01] <Margo> The value if altered versus natural which is all about disclosure to the consumer and all of us.

[23:01] <doos> DragonStek, yes the paraiba ones are

[23:01] <glorib> here is the link I believe it says elbait 1725

[23:01] <glorib> http://www.minsocam.org/ammin/AM35/AM35_407.pdf

[23:02] <BrianQ> good, I have it, I'll have a look through it

[23:02] <@Spauwe> written by a canadian... don't you watch south park Glorib?

[23:02] <@Spauwe> :)

[23:02] <doos> glorib, what is your point??

[23:03] <BrianQ> 0.5 micrometer crystals, now that is small.

[23:03] <BrianQ> Barely photographicable :)

[23:04] <doos> nobody ever denied tourmaline can't be synthesized .. just not commercially

[23:04] <glorib> Just trying to show if meling point is high enough it is possible to diffuse metal into Tourmaline, right?

[23:04] <BrianQ> And people made fun of my microscopic spinel discovery in meteors :)

[23:05] <BrianQ> um... comets, not meteors.

[23:05] <myname> I think we will have to deal with the RJ claims once all his information is out. There is nothing to go on at this point. He's trying to set a precedence.

[23:05] <doos> glorib, everything is possible

[23:06] <@Spauwe> ok just read the part you are referring to, no mention of elbaite

[23:06] <glorib> lithia-tourmaline is elbait

[23:08] <doos> glorib, can you point me to a source of 1 ct+ synthetic tourmalines?

[23:08] <DragonStek> its already been stated that he was wrong in the synthetic dept

[23:08] <doos> yes he admitted to it

[23:08] <@Spauwe> it is indeed... never heard of it before

[23:08] <doos> good man he is that bubba

[23:09] <myname> and the Mozanbique dept.

[23:09] <doos> and the andesine dept

[23:09] <glorib> Not at this time. I just hate to see you cut RJ down so badly, when he just has the consumer interests at heart.

[23:10] <doos> glorib, you are just too gullible

[23:10] <myname> he is doing this to himself

[23:10] <DragonStek> he needs to show why he needed this raman

[23:11] <BrianQ> Really, this stuff isn't so interesting.

[23:11] <@Spauwe> let's stop guessing to his motives

[23:11] <@Spauwe> fact is that his reports don't make sense

[23:11] <glorib> Right, Brian continue it is very interesting

[23:12] <BrianQ> No, I mean, y'all can continue, but my day is about done.

[23:12] <doos> glorib, when most professionals say that bubba is a whack .. why do you still believe him?

[23:12] <DragonStek> thank you brian , great info again

[23:12] <doos> ty Brian

[23:13] <@Spauwe> righto, can we seduce you to get back into quantum physics next week? :)

[23:13] <BrianQ> Ah, Dragon, only so-so info, I think ;)

[23:13] <DragonStek> no you helped alot of the deductions of why it cant be

[23:13] <BrianQ> I'll check on it.

[23:13] <glorib> Goodnight, I'm off to fix dinner.

[23:13] * glorib (n=fn-javac@ip24-254-173-81.rn.hr.cox.net) Quit ("Java user signed off"□)

[23:14] <myname> thanks Brian

[23:14] <@Spauwe> bye mate

[23:14] <doos> coward

[23:14] <BrianQ> mm... it would be a lot easier to show that something can be by just actually doing it ;)

[23:14] <myname> agreed, put theory to the test

[23:14] <BrianQ> Throw that theory right out the window :)

[23:14] <@Spauwe> that would be very believable yes

[23:15] <BrianQ> ciao ciao everyone.

[23:15] <DragonStek> night

□02[23:15] * BrianQ (n=fn-javac@72.146.0.187) Quit ("Java user signed off"□)