

...

[14:09] <Doos> so what shall we do today, corundum?  
[14:10] <Cattrix> ☐03yes!  
[14:10] <Doos> is gemma back?  
[14:10] <gemma> ☐12just  
[14:10] <Doos> and is Annie still with us?  
[14:10] <Cattrix> ☐03Gemma!!!  
[14:10] <gemma> ☐12yo cat  
[14:10] <Annie> yooohhoo  
[14:10] <Doos> lol  
[14:10] <gemma> ☐12cooeeeee  
[14:10] <Cattrix> ☐03lol  
[14:11] <Doos> does anyone have any questions before we start, like on tanzanite or something?  
[14:11] <Frank> Did anyone find out the direction of cleavage?  
[14:11] <gemma> ☐12look down annie's shirt  
[14:11] <Doos> not me  
[14:11] <Doos> heh  
[14:11] <gemma> ☐12(sorry, gemma shamed)  
[14:12] <Frank> I'll send it to the fga via my tutor then shall I?  
[14:12] <gemma> ☐12i would look it up in my millions of books but i don't have time, frank  
[14:12] <Doos> maybe best Frank, otherwise it will remain a mystery for years  
[14:12] <Cattrix> ☐03all I see is that it is perfect  
[14:13] <Frank> It doesn't appear to be in any of the books gemma  
[14:13] <Annie> that has never been explained.  
[14:13] <tnpearl> ☐13thats what my book said  
[14:13] <Frank> just say's "perfect in one direction"  
[14:13] <gemma> ☐12i have those naughty mineralogy books, frank  
[14:13] <Annie> it is one direction, si  
[14:13] <Frank> I got a few too gemma....but it's not in them  
[14:14] <Frank> but no hint of if it's basal or parallel to the c axis  
,,,or what?  
[14:14] <gemma> ☐12ok. then bring in the big guns.  
[14:15] <Frank> seems a silly ommision when the info is available on all the other gems  
[14:15] <Doos> foound it  
[14:15] <Doos> 001  
[14:15] <Frank> oooooooooo where  
[14:15] <gemma> ☐12:) of course doos  
[14:15] <Doos> that's basal  
[14:15] <Doos> webmineral.com  
[14:15] <Cattrix> ☐03oooo that is a good site  
[14:15] <gemma> ☐12now you found that on the internet. how do you know they just didn't make that up?  
[14:15] <gemma> ☐12lol  
[14:15] <Frank> Thank you doos.  
[14:15] <Cattrix> ☐03giggle  
[14:16] <Doos> heh, webmineral is usually correct  
[14:16] <Frank> cynic  
[14:16] <gemma> ☐12just being a beach doos  
[14:16] <Doos> I know  
[14:16] <gemma> ☐12beach!  
[14:16] <Doos> heh  
[14:16] <Frank> beach?  
[14:16] <Cattrix> ☐03no your not!

[14:16] <Doos> bitch I think she means  
[14:17] <gemma> □12;) )  
[14:17] <Frank> ah.....no never...not oor Gem Ma  
[14:17] <Doos> okay corundum today  
[14:17] <gemma> □12attention class is starting  
[14:17] <Doos> we started out easy last week with tanzanite, corundum is a swamp and one of the hardest to id  
[14:18] <gemma> □12then let's do tanzanite again . . .  
[14:18] <Cattrix> □03pinch gemma  
[14:18] <gemma> □12(gemma will shut up)  
[14:18] <Annie> you will need tw weeks for curundum  
[14:18] <Doos> the RI of corundum lies between 1.76 and 1.78 and only two other common minerals are in that range  
[14:18] <Doos> I think so to Annie  
[14:18] <Annie> its much more to learn  
[14:19] blue (~blue@86.130.76.70) joined #yg.  
[14:19] <Frank> Hey blue  
[14:19] <Doos> only chrysoberyl and benitoite fall in the same range, but the first is biaxial and the second is U+ (corundum = U-)  
[14:19] <Annie> aluminium oxide in its purest form  
[14:19] <Doos> hey blue  
[14:19] <blue> hey everyone  
[14:19] <Annie> hi blue, are you new to our forum  
[14:20] <tnpearl> □13hey blue  
[14:20] <blue> been a couple of times but not on staurdays  
[14:20] <blue> can't type  
[14:20] <Doos> no one here can  
[14:20] <blue> Hi Doos  
[14:20] <Doos> hey blue  
[14:20] <Doos> is your friend comming?  
[14:20] <Annie> where are you from , Blue  
[14:21] <blue> haven't heard, maybe working  
[14:21] <blue> Near london Annie  
[14:21] <Annie> great, welcome to the forum  
[14:21] <blue> Thanx  
[14:21] <Annie> me, aussie  
[14:21] <Doos> blue is an FGA aswell  
[14:21] <Annie> wow.,, great  
[14:21] <Annie> another helper for you doos  
[14:22] <Frank> were just starting on Corundum blue  
[14:22] <Doos> for us  
[14:22] <Frank> yes for you both  
[14:22] <Annie> ok, we said that there are two varieties in the corundum  
[14:22] <Doos> okay, as Annie said, corundum is Al2O3  
[14:22] <Doos> lol  
[14:22] <Annie> a blue one called sapphire who is attracted to titanium which makes it blue  
[14:23] <Annie> and chromium element in the ruby  
[14:23] <Doos> some iron in blue aswell  
[14:23] <blue> is not the c ombination of iron and titanium?  
[14:23] <Annie> two different crystal forms  
[14:23] <gemma> □12robert teaches iron and titanium  
[14:23] <Annie> yes, iron and titanium for sapphire  
[14:24] <Annie> but it also depends on its geological environment  
[14:24] <blue> I always thin SIT  
[14:24] <Annie> like the sri lankan ones don't have much iron  
[14:24] <blue> I meant think

[14:24] <Annie> whereas aussie land rocks have too much, so they are preety dark ones

[14:24] <Doos> Sapphire Iron Titanium?

[14:25] <gemma> □12so you are saying that titanium is always a primary agent and the iron is secondary?

[14:25] <Frank> Sapphire iron titanium?.....nice one

[14:25] <blue> aussie tend to have a lot of green in the blue

[14:25] <Frank> lol....cotta learn to type and look at the same time

[14:25] <Annie> there are lots of variety of the say when it green, then its iron

[14:25] <Annie> with purple saph is chromium, iron and titanium

[14:26] <blue> I am thinking of colour grading usinf gemset

[14:26] <Doos> gemma, it depends on locality

[14:26] <Annie> the golden ones are mostly iron and nickel

[14:27] <Annie> fancy padparasha - or lotus flower which is so rare, has the combination of pink and orange colour

[14:27] <Annie> some call it apricot

[14:27] <gemma> □12ty doos ;)

[14:27] <blue> a lot of pads are sold as pads incorrectly.....no orange

[14:28] <gemma> □12question

[14:28] <Doos> yes gembot

[14:29] <Doos> uh gemma

[14:29] <Annie> sure, shoot gemma

[14:30] <gemma> □12oh, i just think i figured it out. the gold are iron nickel. duh. was going to ask if still titantium but that's a dumb quesiton.

[14:30] <Doos> corundum is allochromatic

[14:30] <Annie> thats what makes it rich yellow colour,

[14:30] <gemma> □12that would make it bluish

[14:30] <gemma> □12right

[14:30] <Annie> allochromatiism

[14:30] <gemma> □12which means colored by it's trace elements?

[14:30] <Doos> yes

[14:31] <Annie> yes needs impurities other than itself

[14:31] <gemma> □12k

[14:31] <Doos> pure Al<sub>2</sub>O<sub>3</sub> is colourless

[14:31] <Annie> so different trace elements which can interact with it will produce different colours

[14:32] <Annie> there are lots coming from everywhere and they all will be different in their colour range and specific inclusions

[14:32] <Annie> that is the hardest part

[14:33] <Catrix> □03what makes the green Sapphire what trace elements?

[14:33] <Annie> but thank god in an exam you may not have to know country of origin

[14:33] <Annie> iron Cat

[14:33] <Catrix> □03oh ty

[14:33] <Annie> maybe we should go for the inclusions and explain different countries

[14:33] <Annie> i am no richard hughes, so you'll have to excuse me

[14:34] <Doos> that will be a good idea Annie, but let me do RI first

[14:34] <Annie> sure

[14:34] <Doos> okay RI is a very useless tool for corundum, well not quite but okay

[14:35] <Doos> when you have the RI and established it should be corundum, you have the wonderfull task of seperating it from the many synthetics and treatments

[14:36] <Doos> and for that the refractometer is not your friend

[14:36] africanuck (~africanuc@62.135.93.174) joined #yg.

[14:37] <africanuck> I'm late, hello all  
[14:37] <tnpearl> ☐13hi africanuck  
[14:37] <Doos> then you must change seats and get the microscope up and running .. the microscope is THE tool to use when doing corundum  
[14:37] <blue> hi africanuck  
[14:37] <Cattrix> ☐03Hi Africanuck!  
[14:37] <Doos> hey africanuck  
[14:37] <Annie> Hi African queen  
[14:37] <africanuck> rushed my golf to make it back...better late than never  
[14:37] <africanuck> :)  
[14:37] <Doos> Annie, your turn  
[14:37] <Frank> Hey Africanuck  
[14:37] <Doos> we just started africanuck  
[14:37] <africanuck> hey  
[14:38] <africanuck> oh good  
[14:38] <Annie> well yes, exactly Doos, the microscope is so important that only the inclusions are going to be help in separation  
[14:38] <Annie> of natural and syns  
[14:38] <Doos> Annie will start talking about inclusions .. would be good  
[14:38] <Annie> lol .. ok, all paying attention,  
[14:38] <Cattrix> ☐03yep  
[14:38] <Frank> Yes Maam  
[14:39] <blue> not forgetting zoning  
[14:39] <Annie> there are two geological environment metamorphic and igneous that can produce it  
[14:39] <Annie> burma, sri lanka and vietnam being important source for metamorphic  
[14:40] <Annie> and igneous mainly in tanzaniam, thailand, cambodia and australia  
[14:40] <africanuck> is there any significance in the fact that the two "best colours come from metamorphic?  
[14:40] <Annie> lets start with burma which is (old mogok) now call mynmar  
[14:40] <Annie> well they are less in iron so they are lighter in colour  
[14:41] <africanuck> does that have anything to do with them being from metamorphic, or is it a coincidence?  
[14:41] <Annie> then there is sri lankan ones which  
[14:41] <Annie> yes, it has to do with that africannuck  
[14:41] <africanuck> thx  
[14:42] <Annie> very little iron, therefore light in colour 40% is gem gravel area,  
[14:42] <Frank> what type of occurance are the USA sapphires annie?  
[14:42] <Annie> mainly in raptanumar area  
[14:42] <Annie> can't spell, sorry, but you all know what i mean  
[14:43] <Annie> there are good montana sapphires  
[14:43] <Cattrix> ☐03love them!  
[14:44] <Doos> mostly fro Yogo  
[14:44] <Doos> go on Annie  
[14:44] <Frank> Are the Montana's igneous or metamorphic?  
[14:44] <Annie> mainly igneous ones they too can be dark  
[14:45] <Doos> I'll try to find it for you Frank  
[14:45] <Frank> ty...sorry to be pedantic but it's for my notes  
[14:45] <Annie> ok, do you have richard hughes book, frank  
[14:45] <Frank> No  
[14:45] <Frank> :(  
[14:45] <Annie> if you pass your june exams, i will buy youone

[14:46] <africanuck> I do, but thanks to the six kilos of ham in my suitcase when I came back, it's still in paris, lol

[14:46] <tnpearl> ☐13get ready to buy

[14:46] <Frank> lol...Thanks Annie but I I pass I'll buy You and Doos one each

[14:46] <Annie> I am sure you will pass with honors

[14:46] <Frank> ty

[14:48] <Annie> ok, we were on sri lankan ones which we all know that stones will be cut deep through a patch

[14:48] <Annie> they will have long fine rutile silk,

[14:48] <gemma> ☐12cut deep through a patch?

[14:49] <Annie> they will find a patch (sorry, i may have said it wrongly)

[14:49] <blue> sometimes forming asterism

[14:49] <gemma> ☐12ok

[14:49] <Annie> they cut on the patch so that colour is masked by

[14:50] <Annie> when the cutting is to shallow it will have no reflection and creates only a large ugly window

[14:50] <Doos> igneous Frank, Annie was right

[14:50] <gemma> ☐12that makes sense. thanks before we go on, is there any distinguishing things about burmese

[14:50] <Frank> ty

[14:51] <Annie> the burmese ones have short needles

[14:51] <Annie> didn't you all believe me ?

[14:51] <Annie> lol

[14:51] <Doos> lol yes

[14:51] <Annie> ok, my heart is in my mouth, that i will go any minute

[14:51] <Annie> doos or blues you can jump in

[14:52] <Doos> no go on Annie, doin well

[14:52] <gemma> ☐12don't even think about it, affects the cyber karma

[14:52] <Annie> gemma, we said that burmese have short needles, sometimes a sort of tricle effect

[14:52] <Annie> mainly will have lamellar twinning or zones

[14:52] <Annie> do we all understand these

[14:53] <gemma> ☐12yes

[14:53] <tnpearl> ☐13yes

[14:53] <africanuck> lamellar twinning, no

[14:53] <Doos> think window lammeling

[14:53] <Annie> it is like your venetian blinds

[14:53] <Annie> within the stones

[14:53] <africanuck> that is clear, thx

[14:54] <Annie> in layers

[14:54] <africanuck> got it

[14:54] <africanuck> thx

[14:54] <Annie> good, thanks,

[14:54] <Annie> hang on gotta go to loo

[14:56] <africanuck> while she is gone, would I be correct in thinking that the metamorphic may have better colour because of the "natural heat treatment" that they would have undergone?

[14:56] <Doos> good question

[14:56] <Doos> blue?

[14:57] <Annie> hello, back

[14:57] <Catrix> ☐03re hi

[14:58] <Annie> well,

[14:58] <Annie> Cat, is that a questions regarding Ri or something

[14:59] <africanuck> lol, re-bonjour annie

[14:59] <Catrix> ☐03no it is sayinh heello again

[14:59] <Annie> oh, sorry, i get it , i am sorry, silly me

[14:59] <Doos> its chat-slang Annie

[14:59] <Annie> you can see i only hang around here for chats  
[14:59] <Annie> dont know much about that  
[15:00] <Doos> np  
[15:00] <africanuck> annie, if they really get to you, speak turkish,  
hehehe  
[15:00] <Annie> yeah i will throw german in as well  
[15:00] <Cattrix> ☐03grin  
[15:00] <africanuck> just to confuse the whole lot of us  
[15:00] <Annie> love ya cat  
[15:01] <Cattrix> ☐03ditto :)  
[15:01] <Doos> okay back to rutile needles  
[15:01] <Cattrix> ☐03yep  
[15:01] <gemma> ☐12do all sapphires have rutile inclusions?  
[15:02] <Doos> no gemma  
[15:02] <Annie> ok, :-) with the ones that come out of vietnam you have  
clusters of rutile and not distinct  
[15:02] <Annie> gemma, sometimes they can heat treat it to get rid of it  
or they will treat it to produce needles  
[15:02] <Annie> they do all sorts of things to corundum these days  
[15:02] <Annie> as you know about the latest  
[15:03] <Annie> and not to mention synthetizing it  
[15:03] <Annie> e.g. the geuda sapphires  
[15:03] <Annie> which were so pale  
[15:04] <Annie> got thrown out until they came up with the heating it to  
1650 deg to give a nice rich blue colour  
[15:04] <Annie> which has become such a accepted practice  
[15:05] <africanuck> if they didn't have heat treatment, would enough  
quality sapphires be available to sustain a market?  
[15:05] <Doos> that's an ethic question  
[15:05] <Annie> and which stones had rutile, melted and burning off  
oxygen  
[15:05] <africanuck> it seems like all or almost all of what is out there  
is heated  
[15:06] <Doos> most is africanuck  
[15:06] <Annie> everyone is mucked around with  
[15:06] <Annie> yes mostly  
[15:06] <africanuck> which would lead me to think that if they didn't  
heat treat, there would be very few sapphires worth buying out there  
[15:06] <africanuck> from a beauty point of view, I mean  
[15:07] <gemma> ☐12i think mogok talked about that extensively in the  
last RIP forum  
[15:07] <Annie> well yeah, we should have invited him, he is the best for  
this subject  
[15:07] <africanuck> which forum is that Gemma?  
[15:07] <Frank> There's also a good thread on the AIGS forum about the  
history of burning  
[15:07] <gemma> ☐12the one that hackers took over  
[15:08] <gemma> ☐12oh, right frank, i forgot about how helpful AIGS can  
be on that  
[15:08] <africanuck> I thought that said RIP, but that didn't register  
[15:08] <africanuck> lol  
[15:08] <gemma> ☐12we should remember there is a lot of good work done  
there  
[15:08] <Annie> sure he has a lot of good things on his AIGS site  
[15:08] <africanuck> good point Frank, will look over there later  
[15:08] <Frank> But the GIA claim the only reason the burners got away  
with heating being accepted

[15:08] <Frank> is that the market was awash with them before anyone noticed

[15:09] <africanuck> which brings us back to the question...are metamorphic sapphires of better colour because they undergo a natural heat treatment?

[15:09] <Annie> they induce better colours

[15:09] <Annie> so to speak

[15:10] <Annie> but they can also blow up some zircon halos because of that

[15:10] <Annie> and the healed fractures will be broken

[15:10] <Annie> or create fractures that were not there

[15:10] <africanuck> and natural heat doesn't do this to them?

[15:10] tnpearl (~tnpearl@12.77.162.41) left irc: tnpearl

[15:10] tnpearl (~tnpearl@12.77.162.41) joined #yg.

[15:10] <Frank> So does that make them hard to distinguish from heated stones?

[15:10] <blue> a question, is that just due t heat or could it be the pressure in a metamorphic process

[15:11] <tnpearl> oops

[15:11] <Doos> pressure induces heat

[15:11] <blue> gothca

[15:11] <Annie> the metamorphic ones are created by heat and pressure

[15:11] <Frank> yes but stress can change chemical bonding as well

[15:12] <blue> that was my point.stress

[15:13] <blue> sorry just returned from a cucumber sandwich and pot of earl grey

[15:13] <Cattrix> ☺03oh yum

[15:13] <gemma> ☺12won't it be that the heat will change the chemistry a bit but the pressure will create the strain

[15:13] <Doos> okay, we are straying .. back to rutile

[15:13] <africanuck> so, out of curiosity, if sapphires were heat treated under pressure and stress that emulates what the metamorphic ones undergo naturally, would there be any way to tell?

[15:14] <Frank> heat haloes?

[15:14] <africanuck> oops, was typing as u posted doos

[15:14] <gemma> ☺12sorry doos. pedantic curiosity will get us all to the front of the classroom

[15:14] <Doos> no problem africanuck, those are good questions, but we need to follow a line

[15:14] <Annie> the heating either makes it better or worse

[15:15] <Annie> some can be so damaged that they will end up with surface reaching fractures

[15:16] <Annie> when you see zircon halos which is a zircon which has blown up inside the stone and that has wings around it - is a sign of too much pressure

[15:16] <Annie> the healing fractures will be spread out and dispersed and not intact as a fingerprint

[15:17] <gemma> ☺12sounds like this is a very complicated area that can't be discussed properly in even two or three chats

[15:18] <Annie> like i said, you will need a lengthy time to properly discuss it,

[15:18] <Doos> most likely not, shall we do the inclusions one by one?

[15:18] <gemma> ☺12yes please

[15:18] <Cattrix> ☺03sounds good to me

[15:18] <blue> annie i think i am right in saying that there are no zircon haloes in burmese sapphires

[15:18] <africanuck> since the zircon has different elements, it heats at a different rate than corundum (like air / helium), and will explode at a lower temperature than needed to heat treat sapphire, is that right?

[15:19] <Annie> yes, regardless which way you do it, a jeweller can even blow it up with his heat torch

[15:20] <gemma> □12but we really use inclusions for IDing more than anything don't we?

[15:20] <Doos> yes

[15:20] <Annie> yes

[15:20] <blue> yes

[15:20] <gemma> □12so we could really concentrate on learning those well?

[15:20] <blue> photoatlas

[15:21] <Annie> Blue, you can jump in any time, yes you are right

[15:21] <Doos> lets start with rutile needles and work our way down (zircon will be in the line)

[15:21] <gemma> □12great

[15:21] <africanuck> perfect

[15:21] <Frank> ok

[15:22] <Doos> okay, you want to take the floor back Annie ?

[15:22] <Annie> No Doos, you and Blue and continue

[15:22] <Doos> uh why, you did it perfectly

[15:22] <blue> annie you're great

[15:22] <Frank> she always does...:)

[15:23] <africanuck> go one Annie, u r a natural born teacher, btw

[15:23] <Annie> we should have invited Mogok to this lesson, he would have been great (I mean Vincent

[15:23] <Frank> Yes but he's in Africa for 3 months

[15:23] <Annie> i am so nervour about my computer

[15:24] <Annie> i know he is gone for now

[15:24] <Frank> it's held up so far annie

[15:24] <gemma> □12don't mention it annie!! bad cyber karma!!!!

[15:24] <Annie> it must like me tonight

[15:24] <gemma> □12so we did burma, sri lanka, and viet nam right?

[15:24] <Frank> lol..love you gemma one track

[15:25] <Doos> I'll step in when you get booted Annie

[15:25] <Frank> come on get it done before she has to tend the geegies

[15:25] <gemma> □12must be working with those race horses, frank. one direction.

[15:25] <Doos> the two origins that show rutile needles are Burma (short needles) and SriLanka (long needles)

[15:25] <Frank> yes...hard to reverse a horse

[15:26] <africanuck> and Vietnam, patches of indistinct rutile needles, yes?

[15:26] <Annie> yes, sort of cluster type

[15:28] <Frank> Is there a difference between silk and needles? (I understand they are both rutile)

[15:28] <Doos> the silk is the effect of short rutile needles

[15:29] <gemma> □12are they thinner as well?

[15:29] <gemma> □12so they have the more diaphanous effect?

[15:29] <Doos> the light reflects back from the rutile, giving it the specific silky appearance

[15:30] <Frank> So silk / rain / needles...it's all the same

[15:30] <Catrix> □03isn't rain in synthetic?

[15:30] <Catrix> □03or is that somethin different

[15:30] <Annie> Frank, you mean rain (rain as in acquarmarine)

[15:30] <blue> I have to go, bye for now, it's ben great

[15:31] <Annie> that is different

[15:31] <Doos> bye blue

[15:31] <tnpearl> ☐13bye blue  
[15:31] <Cattrix> ☐03Bye Blue :)  
[15:31] <Annie> bye blue  
[15:31] <Frank> cya blue  
[15:31] <africanuck> cya blue  
[15:32] <Frank> OK rain in Aqua is different (we'll do beryl next)...are rutile needles and sik interchangeable terms?  
[15:32] <Doos> they are brother and sister  
[15:32] <africanuck> but all rutile needles don't give the silk effect, right?  
[15:32] <Annie> we tend to say silk because it will look much finer  
[15:32] <Doos> not all indeed africanuck  
[15:33] <Annie> and the needles when they are heavy looking  
[15:33] <africanuck> so for silk, u need rutile, but rutile doesn't always give silk  
[15:33] <Frank> ok so it's a matter of size and thickness?  
[15:33] <africanuck> oh god...u men  
[15:33] <Doos> silk is mostly used for burmese rubies with their identifying short rutile needles  
[15:33] <Annie> yes size matters  
[15:33] <Cattrix> ☐03lol  
[15:33] <Frank> clean out your mind canuck  
[15:33] <Frank> I never thought of anything till you typed  
[15:34] <gemma> ☐12africanuk. you are making us stray. I would never do that . . .  
[15:34] <africanuck> sorry.... ;)  
[15:34] <Frank> lol  
[15:35] <Doos> the short rutile in birmese ruby is very much proof that the stone is natural  
[15:35] <Doos> same goes for the longer needles in SriLankan stones  
[15:35] <africanuck> and not heat treated?  
[15:35] <Doos> and not heat treated indeed  
[15:36] blue (~blue@86.130.76.70) left irc: blue  
[15:36] blue (~blue@86.130.76.70) joined #yg.  
[15:36] <Doos> heat treatment will dissolve the needles to liquid like inclusions  
[15:36] blue (~blue@86.130.76.70) left irc: blue  
[15:36] blue (~blue@86.130.76.70) joined #yg.  
[15:36] blue (~blue@86.130.76.70) left irc: blue  
[15:36] <Doos> ?  
[15:36] <Annie> welcome back blue  
[15:36] <africanuck> hi, bye, hi, bye, hi , bye...lol  
[15:37] <Doos> so if you see dart like inclusions in fi a ruby and they are angled at 60/120 degrees, you can be pretty sure it's genuine  
[15:38] <Doos> they don't always have to be rutile, can be hematite of ilmenite aswell  
[15:39] <Doos> the rutile is formed by a process called exsolvation  
[15:39] <gemma> ☐12but the structures will be the same? i mean, long in sri lankan, short in burmese?  
[15:39] <Doos> the theory behind that is easy to understand  
[15:39] <Doos> yes gemma  
[15:40] <africanuck> whih means? from the word, it sounds like a form of mineral "sweating"  
[15:40] <gemma> ☐12th  
[15:40] <Doos> we all know that temperature causes things to expand  
[15:40] <Doos> heat I must say  
[15:41] <Doos> when lets say water gets heated, the moleculs start moving faster and expand

[15:41] <Doos> thus creating more volume  
[15:41] <africanuck> yes  
[15:42] <Doos> leaving larger gasps between the molecules  
[15:42] <africanuck> ok  
[15:42] <Doos> the same thing happens with minerals  
[15:42] <africanuck> that is logical  
[15:42] <Doos> while they are forming under heat and pressure, the crystal lattice is more open  
[15:43] <Doos> some impurities, like rutile move freely among the corundum lattice  
[15:43] <africanuck> because their molecules are smaller?  
[15:43] <Cattrix> ☐03OHHHHH!!1  
[15:44] <Doos> then as the mineral moves to the earth surface, the mineral cools down, thus the gasps get smaller  
[15:44] <Doos> not necessarily africanuck  
[15:45] <Frank> in a solution?  
[15:45] <africanuck> ok  
[15:45] <Doos> the rutile has no where to escape, other than a place where there is some space left  
[15:45] <gemma> ☐12the atoms rearrange and close gaps?  
[15:45] <africanuck> contract, right?  
[15:45] <Cattrix> ☐03so it is squeezed  
[15:45] <Doos> not close, tighten  
[15:45] <Doos> exactly Cattrix  
[15:45] <gemma> ☐12tighten. ok  
[15:45] <Cattrix> ☐03and grow between the atoms  
[15:46] <gemma> ☐12molecules . . . ?  
[15:46] <Doos> so the rutile follows the the path where the distances of the corundum have the most space  
[15:46] <Doos> re-arranging  
[15:47] <gemma> ☐12and you are saying this is what allows the inclusions to be long/short, thin/fat regardless the mineral?  
[15:47] <Doos> yes  
[15:47] <gemma> ☐12ty  
[15:47] <Cattrix> ☐03so neat!  
[15:47] <Frank> Do they rearrange along crystallographic axes?  
[15:47] <Doos> absolutely  
[15:48] <Frank> hence the 120 degree star?  
[15:48] <Doos> yes  
[15:48] <africanuck> and would the length of the needles have something to do with the speed at which the mineral cooled?  
[15:49] <Doos> i was trying to state that, but I am not sure about that so i erased that sentence  
[15:49] <Doos> :)  
[15:49] <africanuck> lol  
[15:49] <Doos> I would think so yes  
[15:49] <Doos> the longer the cooling down, the more time to form longer needles  
[15:49] <Frank> I know that heat treated stones sometimes show the rutile needles as dotted lines where they haven't completely gone  
[15:50] <gemma> ☐12because rutile forms in length more than in width?  
[15:50] <Doos> but it could also be a result from just more rutile to begin with  
[15:50] <africanuck> i suppose that this is the mineral equivalent of dissolving sugar in water until saturation, and then heating it, allowing more to dissolve. when it cools, it forms crystals again, right. but in this case, inside the corundum  
[15:50] <Doos> yes

[15:50] <Frank> ty betty crocker  
[15:51] <gemma> □12mind boggling.  
[15:51] <africanuck> lolol, had salad for lunch, am hungry  
[15:51] <Catrix> □03I got goose bumps  
[15:51] <gemma> □12yeah, mail that one to RJ for his recipe book  
[15:51] <gemma> □12catrix, you are so sick. lol  
[15:51] <gemma> □12food food food lol  
[15:51] <Catrix> □03no.... about the rutile !!!! not food!!!  
[15:51] <Frank> om mani padme om Cat  
[15:52] <gemma> □12oh, thought it was the betty crocker reference ;)  
[15:52] <Catrix> □03 no! frowning  
[15:52] <Frank> Cat gets gemstoned  
[15:52] <africanuck> lolol  
[15:52] <Frank> regularly  
[15:52] <Catrix> □03:)  
[15:52] <Catrix> □03I have epifanys  
[15:53] <gemma> □12boy this discussion on rutile has made me better understand a lot of things about gemstone growth  
[15:53] <Catrix> □03not spelled right  
[15:53] <Frank> ooh...what colour..lol  
[15:53] <Catrix> □03gemma Exactly!!!  
[15:53] <gemma> □12do we have time to do the other locations before the giggles set in?  
[15:53] <Doos> Catrix, look at it this way .. if you have a balloon between your hands loosely .. it will be round .. then you put your hands together and squeeze it .. it will flatten out in the driection where there is space  
[15:53] <Frank> I really like all the formation heat versus temp stuff....but we keep getting told we dont need to know  
[15:54] <gemma> □12thank you frank. africanuck and i do to but i think doos said we would discuss that later on  
[15:54] <Doos> lol you need to know  
[15:54] <Catrix> □03really,,, I have thought about this subject and wonderd many times..  
[15:54] <Frank> yes doos I NEED to know  
[15:54] <Catrix> □03I am genuinly giddy  
[15:55] <Doos> but corundum is such a swamp Frank, we get strayed easily  
[15:55] <Frank> I know lots of folk aren't interested in the science behind it all...but there should be space for those of us that are interested  
[15:55] <gemma> □12yes, and it is so facsinating i want to keep on the subject  
[15:55] <Doos> Frank, we'll discuss it all, no worries  
[15:55] <africanuck> me too, it makes it very clear  
[15:55] <gemma> □12frank, as they tell me, if it is mineralogy, put on the hair shirt and wear garlic lol  
[15:56] <Frank> maybe we can keep to corundum gemma....and later we'll do a chat special on it  
[15:56] <gemma> □12that would make many of us happy!  
[15:56] <gemma> □12put it on your wish list lol and hit annie and doos with it after we're done  
[15:56] <Frank> ok  
[15:56] <gemma> □12with me and africanuck as backups lol  
[15:57] <gemma> □12ok. do we have time to finish the locales or is that too big a subject still?  
[15:57] <Frank> Jean yves is a great source for all things geological and / or minerological

[15:57] <africanuck> ok, so rutile needles are formed by exsolution, and the length of them may or may not be the rate of cooling of the corundum

[15:57] <Doos> well it's our fault really, we should have made a plan first, so it's clear what we are discussing

[15:58] <gemma> □12but it's hard when we are all enquiring minds

[15:58] <gemma> □12and you and annie are good enough teachers to not still to a plan if the questions are coming

[15:58] <Frank> making it up as we go along has advantages and disadvantages doos

[15:58] <africanuck> should keep a pad of paper nearby to write questions down for the forum later

[15:58] <gemma> □12stick to a plan, sorry

[15:58] <gemma> □12but the forum gets sidetracked worse than this sometimes

[15:59] <gemma> □12and if it is mineralogy, you get told to sit in a corner :(

[15:59] <gemma> □12even if i don't need to know, i want to . . .

[15:59] <Frank> anyway were all pioneers of internet learning....trying to find out what works best

[15:59] <africanuck> maybe we should ask for a mineralogy section

[15:59] <Doos> it does Frank, some structure is needed with such a large subject .. all the info will get too much scattered

[15:59] <africanuck> yes

[15:59] <gemma> □12yes, doos, i agree

[16:00] <Frank> I agree Gemma....maybe we can start a mineralogy / geology thread...for us hopeful boffins

[16:00] <gemma> □12i try not to side track but you know i was the kid in class with my hand up all the time

[16:00] <Doos> and my head would explode as well :)

[16:00] <africanuck> are there any other locations that have rutile in corundum?

[16:00] <africanuck> or just those three?

[16:00] <gemma> □12trying to bet frank to the teacher's attention lol

[16:00] <africanuck> and if only those three, why?

[16:00] <Frank> lol:-P

[16:01] <Doos> mother nature provides the ingredients africanuck

[16:01] <africanuck> which of course, comes down to geology

[16:01] <Doos> yah

[16:02] <africanuck> why would the Vietnamese sapphires have clusters then?

[16:02] <Doos> the conditions under which they form are different with locality

[16:02] <Catrix> □03I need to look for a picture of a cluster, not sure I have seen one.

[16:03] <Doos> that's a bit of loopy answer, but you get it

[16:03] <Frank> What I don't get is why not all granite massifs have sapphire in them...or all marbles

[16:03] <africanuck> yes, but if the rutile follows the "Path of least resistance", how come the Vietnamese ones don't have clear paths?

[16:03] <gemma> □12perhaps fast cooling, africanuck?

[16:04] <africanuck> boy, that would be nice Frank, my house is made of granite

[16:04] <Frank> mine too :)

[16:04] <gemma> □12but there are many granites and they are made of so many minerals, isn't that why?

[16:04] <africanuck> :)

[16:04] <Doos> if you have Macedonian marble, odds are there is corundum in it

[16:05] <Doos> not the best quality, but okay  
[16:05] <Frank> Dunno gemma but back in Scotland we have aluminium being processed from the groun....how come none of it reacted with oxygen to make corundum?  
[16:05] <Doos> it does  
[16:06] <gemma> ☐12oh, heck you guys, we are forgetting about earth formation from the get go. it all formed differently in time and was affected by metorites and tectonics etc.  
[16:06] <Frank> well there are a few Scottish sapphires but they are very rare  
[16:06] <africanuck> that's because the English stole them Frank, lolol  
[16:06] <Doos> Frank, when you expose Al to air, it will form corundum  
[16:06] <gemma> ☐12so that's not bad dishwashing on my pans but corundum forming? lol  
[16:07] <Frank> slowly?  
[16:07] <gemma> ☐12but it depends on the depth of the aluminum in the earth etc doesn't it?  
[16:07] <Doos> the exposing of Al to air is a key element in anodizing al  
[16:07] <Frank> but when the Aluminium was being deposited at that site during the earths formation....none of it seemed to make corundum  
[16:08] <gemma> ☐12because maybe other elements were more prevalent and taking the oxygen . . .  
[16:08] <gemma> ☐12right place, wrong time kind of thing  
[16:08] <Frank> and there was available oxygen in almost every molecule of rock  
[16:08] <tnpearl> ☐13would there not have to be some Iron?  
[16:08] <Frank> only if I want coloured stones  
[16:09] <gemma> ☐12but elements all have different strengths to pull in other atoms, right?  
[16:09] <Frank> yes  
[16:09] <gemma> ☐12so it would depend upon what other elements besides aluminum are present  
[16:09] <gemma> ☐12that could/would grab the oxygen  
[16:09] <Frank> Sorry doos , Annie....looks like the animals have taken over the zoo  
[16:09] <gemma> ☐12thus aluminum loses out and so no sapphires for frank  
[16:09] <Doos> lol yes  
[16:10] <africanuck> and all u get is tin foil instead, bummer  
[16:10] <africanuck> lol  
[16:10] <gemma> ☐12but at least we aren't being wild animals, frank. we are being very focused.  
[16:11] <Frank> yes focused is good.....not as good as sapphires but ok  
[16:11] <gemma> ☐12and here is a mineralogy poser for you frank . . .  
i've been looking at SGs re the elements and seeing a correlation. not an original thought i'm sure but interesting  
[16:12] <Frank> is it the atomic weights ?  
[16:12] <gemma> ☐12anyway, do we still have time for the rest of the corundum locations so we have a clean break in this lesson?  
[16:12] <gemma> ☐12yes frank  
[16:12] <gemma> ☐12i promise i will shut up doos and annie. sit on my hands, i will  
[16:13] <Doos> it's play time now  
[16:13] <Frank> lol.....she types with her toes  
[16:13] <gemma> ☐12:(  
[16:13] <Doos> I think Annie fell asleep  
[16:13] <Catrix> ☐03oh this chat is going to make some great notes!!!  
[16:13] <gemma> ☐12then i will go see if my boys killed each other during the night

[16:13] <Frank> yes cat...good one huh  
[16:13] <gemma> ☐12yeah, it's been a great one.  
[16:13] <africanuck> it was very good  
[16:13] <Frank> say hi to em from me gemma  
[16:13] <gemma> ☐12it's fun to laugh and fart around but when we discuss.  
whew!  
[16:13] <gemma> ☐12i will  
[16:13] <gemma> ☐12i will give them an apple and lie and say it came from  
you :)  
[16:14] <Frank> as you say...focused...we wouldn't be here if we weren't  
[16:14] <africanuck> so questions that didn't quite get answered:  
[16:14] <Catrix> ☐03i really do get goose bumps when I "get it" :)  
[16:14] <gemma> ☐12write 'em down, africanuck.  
[16:14] <africanuck> I am  
[16:14] <gemma> ☐12frank has a list too  
[16:14] <gemma> ☐12lol  
[16:14] <Frank> me to cat....the eureka moment  
[16:14] <gemma> ☐12yeah, i learned so much from this chat.  
[16:14] <Catrix> ☐03that was the word I was looking for!!!  
[16:14] <gemma> ☐12it all starts to relate to other things  
[16:15] <gemma> ☐12yeah, cat, computers, cats, and chocolate . . . and  
charisma :)  
[16:15] <Frank> as doos says...if you learn more than you need then what  
you needs becomes easy  
[16:15] <Doos> true  
[16:15] <Catrix> ☐03hehehe  
[16:15] <Catrix> ☐03chocolate  
[16:15] <gemma> ☐12so i am vindicated with my mineralogy questions lol  
[16:16] <Catrix> ☐03i think so  
[16:16] <Frank> we should start a club gemma  
[16:16] <Doos> I think this topic will need more than 3 weeks  
[16:16] <Catrix> ☐03taht is fine with me..  
[16:16] <Frank> not just minerology but all the related earth sciences  
[16:17] <Doos> but the good thing is that we tackle inclusions of the fly  
[16:17] <Catrix> ☐03lol frank  
[16:17] <Frank> you grt your wave plate yet doos?  
[16:17] <Doos> guess  
[16:17] <Doos> the fuckers  
[16:17] <Frank> no?  
[16:17] <Catrix> ☐03inclusions of th FLY???  
[16:17] <Doos> on the fly\* sorry  
[16:17] <Catrix> ☐03oh heheh I C  
[16:17] <Frank> bastar\*s.....no light..no wave plate...and they got your  
money last year?  
[16:18] <Doos> december  
[16:18] <Doos> I'll e-mail them again monday  
[16:18] <africanuck> where are they located Doos?  
[16:18] <Doos> germany  
[16:18] <Annie> oh my, guys sorry, i fell aleep on te keyboard again.  
[16:18] <Frank> taint right.....post about them on the forum...or tell  
them your gonna  
[16:18] <africanuck> go knock on their door  
[16:18] <Doos> lol Annie  
[16:18] <Frank> warn everyone away from them  
[16:19] <Annie> where are we ?  
[16:19] <Catrix> ☐03That is ok Annie  
[16:19] <Doos> I will Frank if I'm not satisfied soon  
[16:19] <Frank> I thought they were merry kins

[16:19] <africanuck> it's ok Annie, it's late where u r  
[16:19] <Annie> oh duh me  
[16:19] <tnpearl> ☐13bless your heart annie  
[16:19] <africanuck> I think we are at the goofing off stage annie  
[16:19] <Cattrix> ☐03giggle  
[16:19] <Frank> Hi annie....you looked so lovely asleep we thought we'd just sit here and admire you  
[16:19] <Annie> oh really, are we done  
[16:19] <Frank> no not done  
[16:19] <Annie> oh lol Frank, you are sweet  
[16:19] <africanuck> that is what i understood, at least for today  
[16:20] <Frank> but groaning from overfilled minds  
[16:20] <gemma> ☐12so if we are goofing off, then yeah i'll do chores. we can stay on corundum until it's beaten to death for all i care. and frank, introduce the idea of the mineralogy forum. might fly. especially if jean-yves pipes up . . .  
[16:20] <gemma> ☐12oh, we aren't done? then i'll stay :)  
[16:21] <Doos> Annie, we will need a plan for next week .. e-mail me your thoughts  
[16:21] <Annie> well, i should no go to bed, then  
[16:21] <Frank> do you see the power of suggestion I have over them....evil laugh  
[16:21] heh (~test@202.156.240.5) joined #yg.  
[16:21] <Doos> hi heh, just in time  
[16:21] <Annie> Doos, sure please email and we'll discuss it  
[16:21] <heh> Exam in one weeeeeeeek  
[16:21] <tnpearl> ☐13hi heh  
[16:21] <Cattrix> ☐03Sleeep Tight Annie  
[16:21] <gemma> ☐12and doos and annie, you need to tell us when we need to write a question down for the end of the lesson so we don't distract too much.  
[16:21] <Frank> god your timing impecable heh  
[16:21] <Annie> oh hhi hey  
[16:21] <heh> hi Annie  
[16:21] <tnpearl> ☐13good night annie  
[16:21] <Doos> Annie, best if you e-mail me  
[16:21] <heh> ciao annie  
[16:22] <heh> I had to come when lesson ends  
[16:22] <heh> hehehehe  
[16:22] <Frank> bye Annie....sweet dreams  
[16:22] <Doos> night Annie  
[16:22] <Annie> sorry, hey, falling asleep, w will catch you later  
[16:22] <Frank> are you ready for next week heh?  
[16:22] <heh> Yeah  
[16:22] <Frank> good  
[16:22] <heh> I've taken leave for the whole of next week to prepare.  
[16:22] <Doos> exciting heh  
[16:22] <Annie> Hey, wishing you all the best for the exams  
[16:22] <heh> :)  
[16:22] <Frank> when is the day?  
[16:23] <heh> 13 June  
[16:23] <heh> Monday  
[16:23] <Frank> I'll be sending you good thoughts  
[16:23] <tnpearl> ☐13brb  
[16:23] <heh> Send me good answers  
[16:23] <heh> :)  
[16:23] <Frank> lol  
[16:23] <Cattrix> ☐03giggle

[16:23] <gemma> □12lesson is done. i'm off. thanks for the great discussion. and frank: may mineralogy be with you :)

[16:24] <Frank> may the force be with you too gemma

[16:24] Annie (~Annie@203.61.103.237) left #yg.

[16:24] <Frank> hugs

[16:24] <Cattrix> □03See ya Gemma HUG!

[16:24] <gemma> □12well, not too much. those horses are strong lol

[16:24] <Frank> be masterful

[16:24] <africanuck> see ya gemma

[16:24] <gemma> □12hugs guys, and thanks for a great talk.

[16:24] <gemma> □12yeah, frank, a Bleary-I master lol

[16:25] <heh> what was today's lecture on?

[16:25] gemma (~gemma@68.72.148.211) left #yg.

[16:25] <Frank> starting corundum heh

[16:25] <africanuck> corundum, mostly rutile

[16:25] <Cattrix> □03Corundom

[16:25] <heh> OO

[16:25] <heh> Hard stuff.

[16:25] <Frank> it'll probably come up in the exam....too bad you were late

[16:25] <Frank> lol

[16:25] <heh> dang

[16:26] <africanuck> sure that Doos will post the log

[16:26] <heh> there's so much about corundum

[16:26] <Doos> ofcourse

[16:26] <Cattrix> □03wow I am being blessed my kiddo is still asleep, usually I am gone way before now.

[16:26] <heh> Hughes did a good job in his book on that.

[16:27] <Frank> I've actually gone a full chat without being booted...it must be a record

[16:27] <heh> haha

[16:27] <Doos> yah, annie aswell

[16:27] <Cattrix> □03you are blessed also .. hhehehe

[16:28] <heh> what's the next stone?

[16:28] <Cattrix> □03it was all the good energy

[16:28] <Doos> corundum

[16:28] <heh> still corundum?

[16:28] <heh> just to clarify something, does corundum cleave?

[16:28] <Cattrix> □03no

[16:28] <Doos> poorly

[16:28] <heh> FGA says it does.

[16:29] <heh> Hughes book seems to say he isn't sure.

[16:29] <Cattrix> □03the book I was looking at said no.. so it is still up in the air

[16:29] <heh> what book is that?

[16:29] <Doos> poor cleavage, good parting

[16:29] <Frank> FGA says a very poor cleavage parallel to the basal abd rhombohedral faces

[16:30] <Cattrix> □03what is parting?

[16:30] <Frank> and parting parallel to these planes

[16:30] <Doos> cleavage along twinning planes

[16:30] <heh> yeah, good parting due to exsolution of boehmite and illeminite(?) b/w twinning planes

[16:30] <Cattrix> □03ok

[16:30] <Frank> it's like cleavage cat...but only when it occurs along a twinned crystal

[16:31] <Doos> guys I'm heading for the shop

[16:31] <Cattrix> □03when the twins get pulled apart... or sawn?

[16:31] <heh> pulled apart  
[16:31] <africanuck> Doos, thanks for a very interesting chat today  
[16:31] <Catrix> ☐03OK Doos have a good day  
[16:31] <Frank> How come yo've done parting heh....thought that was for  
the diploma course work  
[16:31] <heh> it just parts I guess  
[16:31] <heh> huh?  
[16:32] <Frank> cya doos...thanks for today  
[16:32] <heh> was I wrong?  
[16:32] <Doos> bye all for now, till soon again  
[16:32] <Catrix> ☐03Yes Thank you Doos..  
[16:32] <Doos> and keep it clean or mail me the log  
[16:32] <africanuck> lolol  
[16:32] <Doos> :)