Dr. Downs,

Information on possible hydroromarchite sample…

1) 63-125 μm in size, tetragonal in shape, ρ>2.96 g/cc, nonmagnetic with hand magnet, transparent to translucent sometimes with a yellowish tint, XRDed on single grain film Gandolfi and Debye-Scherrer cameras as probable hydroromarchite but not positive, do not know chemistry.

2) Raman pattern is nice and quickly obtained, but must start with low power settings. I was using a 532 nm laser. I think at 10mW and higher it will burn; however, some grains won't. Maybe 5mW too, I know 2mW should be safe.

3) For transportation purposes, the grain is mounted in water-soluble glue in the center of a micropaleoslide. A very wet fine tipped model paintbrush should be able to easily dislodge it. You might want to roll it around in a drop of water to clean the glue off of surface.

4) This grain is from a sample that was sent to us from Dr. Gary Byerly from LSU. It is from a proposed meteorite impact layer ~3.5 Ga in age (however the grain may be secondary). Bulk sample was named S1 SA526-1 from the Hooggenoeg Fm., Barberton Greenstone Belt (BGB), South Africa. Most recent publication known about this layer is: Lowe, D., Byerly, G., Kyte, F., Shukoklyukov, A., Asaro, F., Krull, A., (2003) **Rubey Colloquium Paper** Spherule Beds 3.47-3.24 Billion Years Old in the Barberton Greenstone Belt, South Africa: A Record of Large Meteorite Impacts and Their Influence on Early Crustal and Biological Evolution. *Astrobiology* vol. 3 no.1, pp 7-48.

Please let me know when you have received the sample, and you have completed and posted you findings. Thank you for you help.

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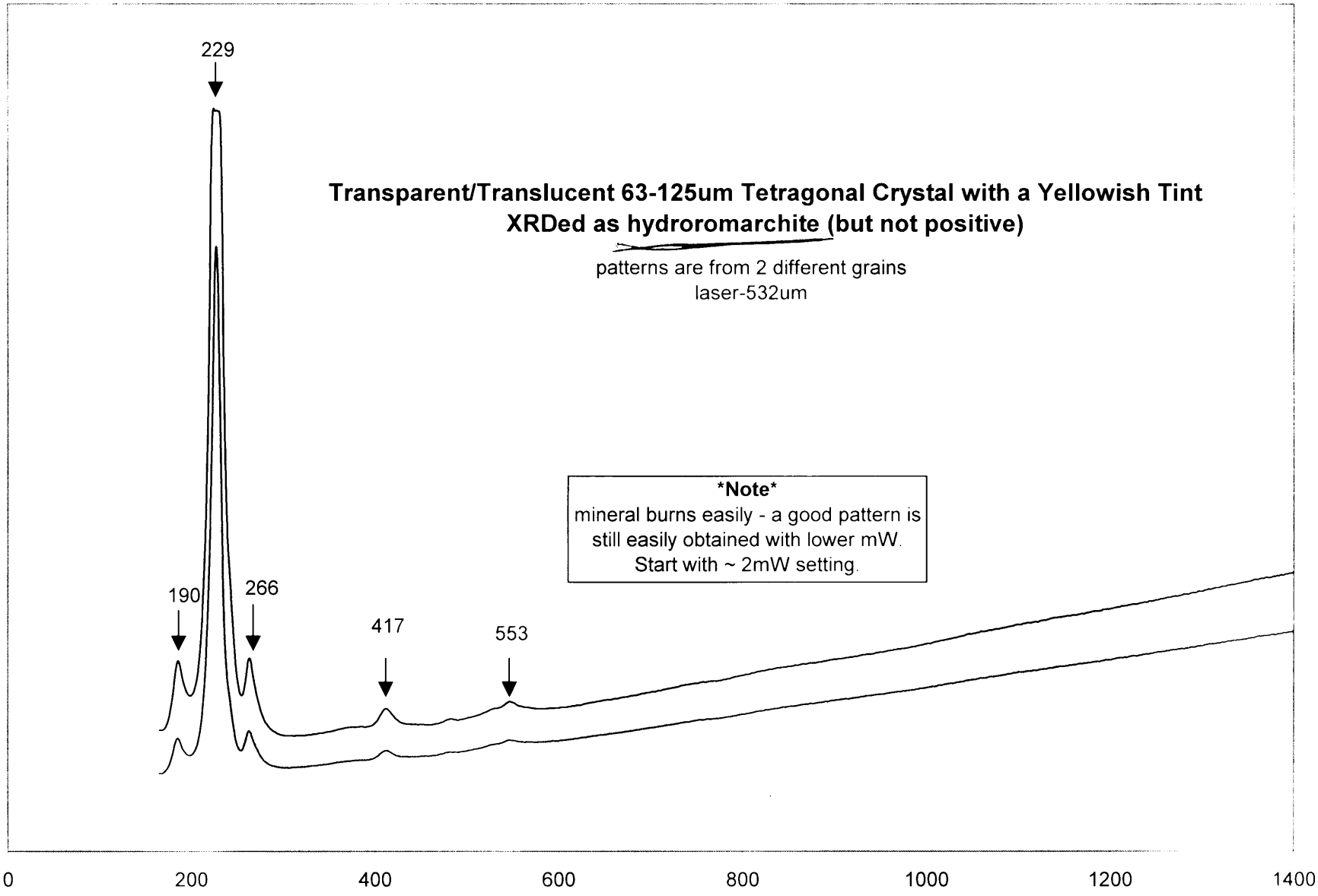
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Transparent/Translucent 63-125um Tetragonal Crystal with a Yellowish Tint
XRDed as hydroromarchite (but not positive)
patterns are from 2 different grains
laser-532um
Note
mineral burns easily - a good pattern is still easily obtained with lower mW.
Start with ~ 2mW setting.
190
266
417
553
0
200
400
600
800
1000
1200
1400