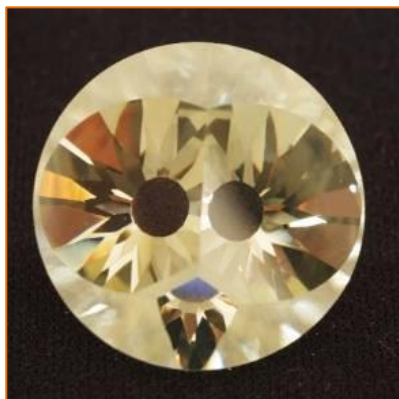




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SEPTEMBER 2024



'Nottolo' Owl Design by Marco Voltolini, 16.8 mm, 32.2 ct, Yellow Cubic Zirconia
Cut by Duncan Miller

DIARY

August	31	9.45am	Visit to WOMAG Factory, Epping for club members
September	7	10:00–14:00	Open to the Public Day – Rocks, gems, jewellery, mineral specimens to look at, chat about, swap, sell or buy.
October	5	10:00–14:00	Open to the Public Day – Rocks, gems, jewellery, mineral specimens to look at, chat about, swap, sell or buy.

The Chapman's Peak Contact

(as you probably haven't seen it before)

The scenic Chapman's Peak Drive winds in large part along the contact zone between the underlying Cape Granite and the overlying Table Mountain Group (TMG). It is a classic example of an *unconformity*, in this case between the 540 million-year-old Cape Granite, which has been eroded into a gently undulating surface on which sediments of the TMG were deposited from about 470 million years ago.

We've all no doubt driven along this road and even if you aren't a geologist, you can see that the road cutting reveals something 'different' from the contrasting visual appearance of the grey granite and often maroon-coloured and bedded TMG sediments. However, returning to Hout Bay on a ski boat after a pelagic birding trip on 20 April 2024, I got a new perspective on the contact. It was quite distant from the boat and the light wasn't very good and so the image in **Figure 1** is rather poor but you can make out the salient features.

The orange line marks the general location of the contact zone, with grey Cape Granite below the line and sub-horizontal sediments of the TMG above it (Graafwater Formation followed by the thick Peninsula Sandstone Formation). The contact slopes gently to the south and is obscured in part in this image by a bulge of Cape Granite. The Peninsula Sandstone Formation is the source of the boulders that occasionally fall down or are washed down and block the road. The brown area extending from the skyline to behind the granite bulge between the orange lines appears to be a recent rockfall of some type? **PR**



Figure 1: Chapman's Peak Drive Looking Southeast from the Sea

From the Cabinet of Curiosities



This month's **Curiosity** is **Kyanite** 'done' four ways! This alumino-silicate mineral usually comes in shades of blue, due to the presence of iron, as in **Figure 1a**, but **Figure 1b** is a grey-black colour, caused by graphite inclusions. These black kyanites were originally mistaken for a rare amphibole. Common trade names for it are "reticite" and "raethicite," named after the Rhaetian Alps in Italy where it was originally discovered. **Figure 1c** is 3 cm green crystal, the green colour caused by traces of chromium and vanadium. All are from Brazil. Figure 1d is a crystal of orange kyanite from Tanzania, this colour caused by traces of manganese. **PR**



1a



1b



1c



1d

Figure 1a: Blue Kyanite 8 cm. Figure 1b: Black Kyanite 11.5 x 7.0 cm. Figure 1c: Green Kyanite 3 cm
(all in The Rosey Collection) Figure 1d: Orange Kyanite (Pinterest)

Who was “TVJ”?

I was phoned earlier this week by Graham who let me know that one of our old members, Trevor Vaughan Jones, had just died. He asked if I could put together a few words in his memory to inform members. We haven't heard from Trevor for a few years now as he never took to computers, and the lack of a working Post Office killed all written communications. However, when I searched his name in my club records, so many past aspects connected to his name came up. Here are a few:



Trevor was Secretary of our club long before I joined, and his meticulous hand-written records of EXCO Monthly Meetings are to be found in a classic Minute book. He was a humble, unconventional, self-taught man, interested in a variety of factual topics, but nothing esoteric. He went everywhere on his small motor bike, even as far as Springbok and a Gemboree at Upington. I called him our Roving Correspondent as he would always write up where he had been. He used libraries for detailed research on topics of interest to him and wrote numerous articles for the MinChat after I became the Editor. I gave him a series of stamped addressed envelopes into which his hand-written articles were put in the post to my home address for me to type up. The most famous were probably the Old Cape Town Mines still to be found on our website - <http://ctminsoc.org.za/articles/old-cape-town-mines> – which brought expressions of interest from many outside readers.

I found a file from 2016 on our monthly club meetings which were held regularly on every second Saturday of the month, and for which Trevor wrote up a detailed report on the topic of the day for the newsletter. He gave the occasional talk himself too.

He was a regular participant in the Mineral Discussion Group that was held on the third Saturday of the month, joining Maurice Conradie, Tony Garman and others in an active discussion on the identities or habits of the chosen mineral. His knowledge was wide.

Trevor had an amazing eye for unusual specimens which he spotted on Open Day, in the field, or even at the flea market at Milnerton where he once bought a meteorite for R60. He sadly parted with his mineral collection several years back.

Farewell, Trevor, you were a worthy club member. We send our sympathies to your wife, Bernie, and other friends and family.



Left. 2007 - TVJ's tent after an overnight storm in Springbok campsite (his bike still well-covered and snug).
Right: Trevor giving a talk and demonstration at the club. JW

Quartz Inclusions seen down the Microscope

Eugene Oosthuizen

Following on from Peter Rosewarne's article on "Included Quartz" in the July newsletter, Eugene Oosthuizen from the Pretoria Club responded. He said:

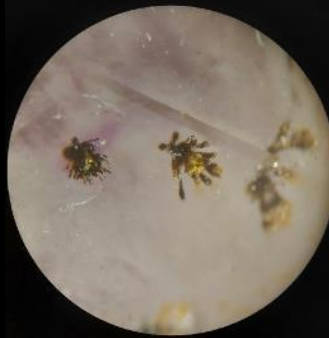
"Last month's article on quartz inclusions motivated me to take a few photos of the quartz we collected recently in the Jozini area. I unfortunately don't have a photo shoot set-up so it boiled down to a microscope and a cell phone. I include a few, which I would like to share with you.

The golden sprays in photo 1,3, 4, 5 & 7 are goethite. The reddish "leaf" in photo 8 is hematite. I'm not sure of the mineral (yellow spray) in photos 2 and 6. In photo 6 the reddish spheres at the bottom is the tip of a hematite phantom in the quartz and on top of that is a yellow spray. Not sure what that is. The green worm-like mineral to the left is chamosite."

Here are his photos:



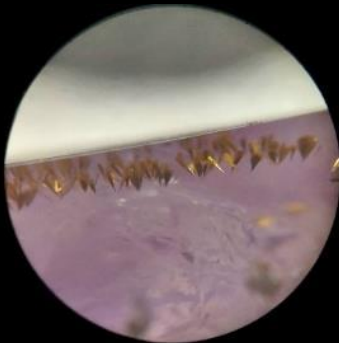
1. Goethite



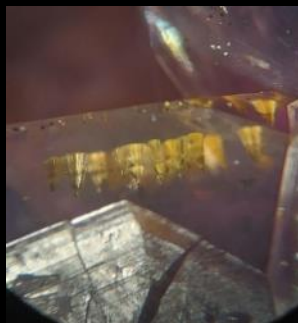
2. ??



3. Goethite



4. Goethite



5. Goethite



6. Hematite with yellow spray,
and green wormlike
chamosite



7. Goethite



8. Hematite "leaf"

Does anyone else have any similar photos they wish to share with us? Two other very interesting links on this topic are:

<https://www.topminerals.info/index.php?searchterms=quartz+inclusions&searchauthor=-&level=search>
<https://www.mineral-forum.com/message-board/viewtopic.php?p=57068>

See also the Faceting section on page 10 for some cut quartz gems and their inclusions.

“Orange”

by Peter Rosewarne

Introduction



Spessartite

Green is the last main colour not yet covered by these colour-theme articles but let's get there via orange. I couldn't think of or find any appropriate saying or moniker but orange is apparently a sign of fun, creativity and optimism so I'm optimistic that we'll have some fun and be creative in this article. Orange-coloured minerals that come to mind include *wulfenite*, *spessartite*, *orpiment*, *fluorite*, *pyromorphite*, *sphalerite* and *scheelite*. I can't think of any minerals with orange in the name except for Orange River Quartz, and that's not an official name, and no mines either. Mind you, there are *mandarin garnets* and *tangerine quartz*, all orange hues? Orange colouration is often due to the presence of *iron oxides* but no doubt we'll uncover some additional *chromophores*. All images are from or ex The Rosey Collection except **Figure 10**.

The Minerals

First up in **Figure 1** is a carpet of sparkling orange spessartite crystals coating *orthoclase feldspar*, from Tongbei, China. Almost looks like molten copper and reminds me of the spectacular flower display around Springbok in August/September of a good year.



Also from China, in this case from the Pingwu Mine, are some large pseudo-octahedrons in this small cabinet size specimen of scheelite, a *calcium tungstate* mineral, in **Figure 2 below left**.

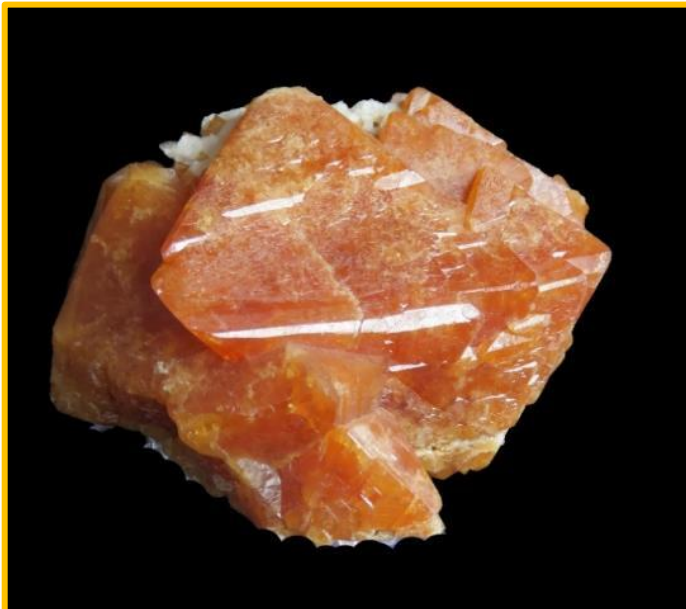


Figure 2: Scheelite, Pingwu Mine, China

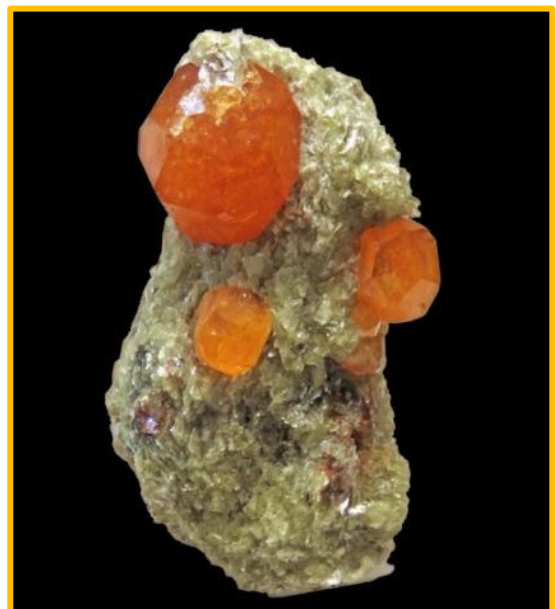


Figure 3: Spessartite garnet crystals

Figure 3 above right shows orange spessartite garnet crystals in a *mica (muscovite) schist* from the well-known Loliondo Hills, Arusha Region of Tanzania. The largest garnet crystal is 1.5 cm. The orange colour is due to manganese, Mn^{2+} .

Pure wulfenite, a *lead molybdate*, is colourless but traces of *chromium* can impart a yellow, orange to red colouration, examples from the Erupción Mine in Mexico often having a characteristic butterscotch colour and look good enough to eat, as shown in **Figure 4a** and **4b** below. The larger crystal in **Figure 4a** is 1.4 cm.



Figure 4a: Wulfenite on Calcite, Mexico

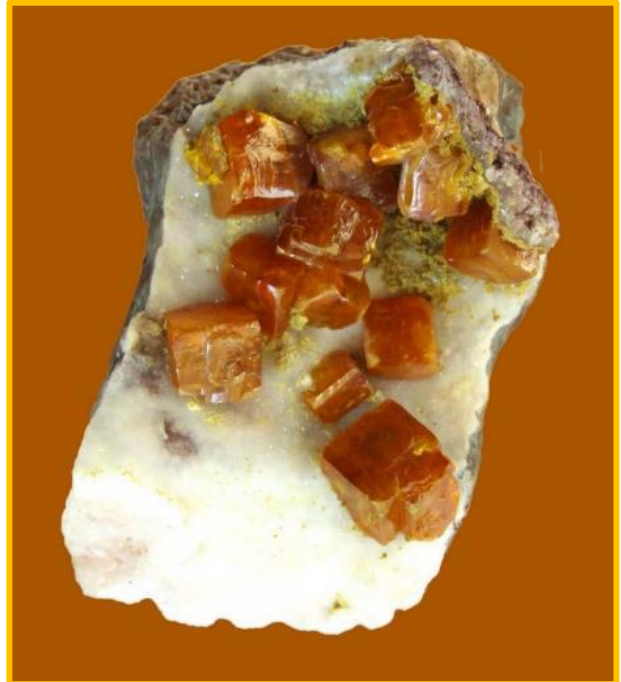


Figure 4b: Wulfenite on Calcite, Mexico

Figure 5 shows an unusually deeply coloured orange fluorite cubic crystal group from the Erika Mine in Germany, not a site that I am familiar with apart from this specimen. It is in Bavaria and was closed in 1973. There are many radioactive minerals in the mine area and perhaps these are the cause of the deep orange colouration? According to the specimen label, it was mined in 1960.

Figure 5: Fluorite, Erika Mine, Bavaria, Germany



Orpiment, an *arsenic sulfide*, isn't a common mineral in collections but **Figure 6** is quite a nice specimen for the species. This one is from the Twin Creeks Mine in Nevada, USA, renowned for collector-grade orpiment specimens.

Figure 6: Orpiment, Twin Creeks Mine, USA

Figure 7 below shows a lovely cabinet-sized spray of light orange tabular crystals of barite from the famous discoveries at the Rosh Pinah Mine, Namibia, which is now in the Francois and Lorraine Retief collection.



Figure 7: Barite, Rosh Pinah Mine, Namibia



Figure 8: Smithsonite, Weinan, Yunnan Province, China

An unusual orange-coloured smithsonite is shown in **Figure 8 above right**, the orange colouration being caused by *cadmium*. This example is from Weinan, Yunnan Province, China, from where it seems you can get any colour or size of any mineral that you can think of! And to think that prior to about the mid-80s, this source of amazing mineral specimens was unknown in the West. Since then, many top collectors such as Steve Smale and Rob Lavinsky have developed sub-collections of Chinese mineral specimens.

The orange colour of the pyromorphite specimens shown in **Figure 9 below** is due to the presence of arsenic in this *lead chlorophosphate*. These examples are from the Bunker Hill Mine in Idaho, USA, which yielded the 'best of' for the species in a series of spectacular finds in the 1990s.



Figure 9: Pyromorphite, Crystals and Botryoids, Bunker Hill Mine, Idaho, USA



And, finally, orange sphalerite, which also comes in shades of black (*black jack*), brown, grey, red (*ruby jack*), yellow and green. The example in **Figure 10 below** is from the famous Álvira Mines in Spain. It is basically a *zinc sulfide* with minor iron content but increasing iron content causes the darkest colours while impurities contribute to the various colours.



Figure 10: Sphalerite and Dolomite, Áliva Mines, Spain (courtesy of John Betts Fine Minerals)

Concluding Remarks

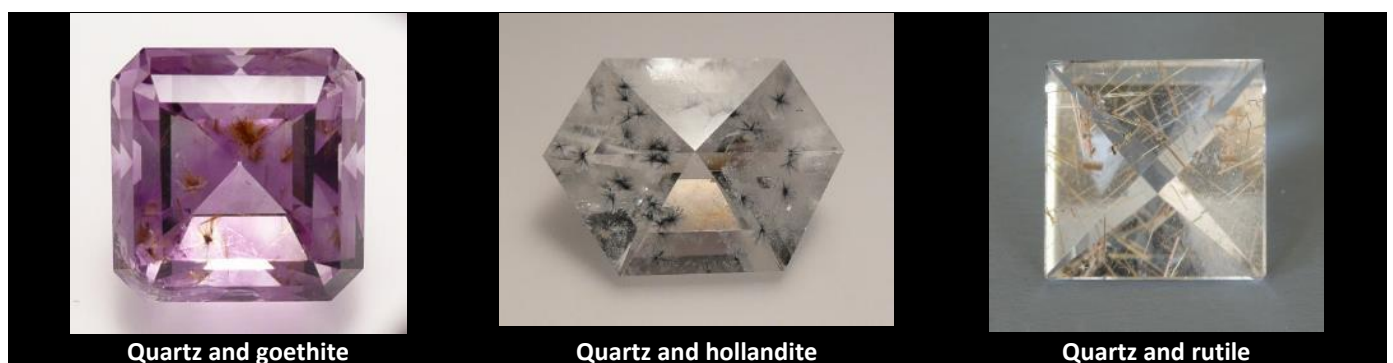
There might not be any minerals named orange but there are a couple of tantalizingly close anagrams in Erong(a) and Garne(o). It's also been an opportunity to reacquaint myself with some of my less well-known specimens, particularly the Erika Mine fluorite, and hopefully, have some fun, creativity and optimism along the way. And to finish off, an orange Sun, complete with sunspots, courtesy of a fluorescent *calcite* ball.

(Internet image)



“FACETIPS – A Gem Cutter’s Notebook” by Duncan Miller.

Most of the faceting articles published over the past few years in the Mineral Chatter have now been compiled into a single 128-page document. The pdf file is available for download for free from <http://ctminsoc.org.za/articles.php> for those interested in having all the articles together.



Quartz and goethite

Quartz and hollandite

Quartz and rutile

Duncan Miller says: Here are photos of three quartz gems with different inclusions. I sold them a long time ago, so unfortunately don't have a record of their sizes or weights.

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