New Sapphires from Ambatondrazaka, Madagascar

Madagascar, an island of many gem treasures, saw in recent months another gem 'rush' after the discovery of a new sapphire deposit at Bemainty, located about 35 km east of the small town of Ambatondrazaka (Perkins and Pardieu, 2017). With about 50,000 artisanal miners working the gravels of this alluvial deposit, this new site has so far reportedly produced an impressive amount of mainly blue sapphires, including some large stones up to 30 g of exceptional quality and additionally some orangey pink sapphires. These stones are currently arriving in the gem market in significant quantities, and some of them have been heated to improve their colour and clarity.

SSEF recently analysed a number of sapphires reportedly from this new source ranging from 1.3 ct to 34 ct (Figure 16). Most of the stones showed a rather pure moderately strong to strong blue colour, sometimes with a slight greyish to greenish tint. UV-Vis spectroscopy (Figure 17) showed that they can be separated into two categories, both of metamorphic origin. One group exhibited only small features due to Fe^{3+} that are reminiscent of sapphires from Sri Lanka and Kashmir with slight turbidity. The other group consisted of mostly dark, saturated blue stones with rather distinct Fe^{3+}-related absorption features, as also seen in Burmese sapphires.

Many of the studied specimens exhibited a slight to marked milkiness due to sub-microscopic fine particles in zones and bands (Figure 18a), but only occasionally did they have small rutile needles. Some of these sapphires also showed patches and crossed stripes of coarser particles and very fine kinked dust lines (Figure 18b), somehow reminiscent of Kashmir sapphires. We also observed characteristics found in gem-quality sapphires from other metamorphic-related deposits in

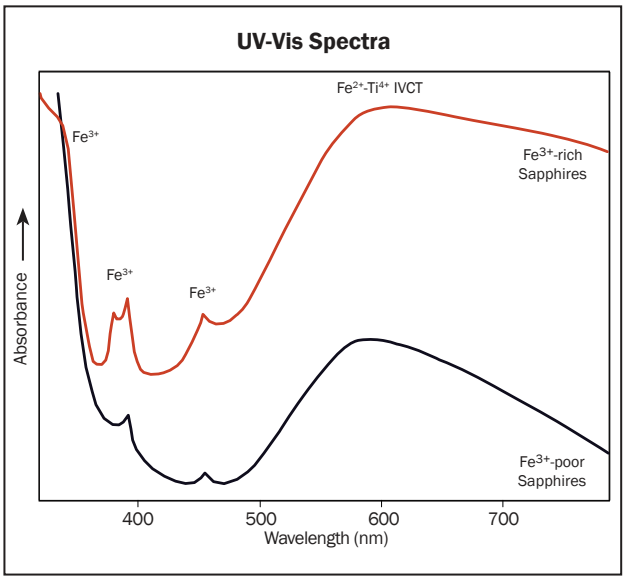

Figure 17: Absorption spectra are shown for the o-ray (i.e. beam oriented perpendicular to the c-axis) of blue sapphires from the new Ambatondrazaka deposit. The spectra were recorded with a portable UV-Vis spectrometer developed by SSEF.

Figure 16: These blue (~1.3–34 ct) and orangey pink (~30 ct) sapphires are representative of some of the stones that were recently studied by SSEF from a new deposit near Ambatondrazaka in Madagascar. Photo by Julien Xaysongkham, SSEF.