

Color examination of a difficult Helgoland issue with a Video Spectral Comparator

by Lawrence R. Mead

One of the more difficult areas for the philatelist is distinguishing issues of a stamp which primarily differs by color. Even experts will flub on some occasions. To illustrate, consider the eight Michel 6 issues of Helgoland which are shown in Image 1. In images 2 and 3 we show certificates from Karl-Heinz Schulz (BPP)



Top left: Mi 6a, 6b

Top right: Mi 6c, 6e

Bot left: Mi 6d, 6f

Bot right: Mi 6g, 6h

Image 1

and Jens Muller (independent examiner) for two Mi 6 [1]. As one can see from the certificates, they differ in their identification of the stamp in both cases. In Image 2, Schulz says it is Mi 6f, Muller says Mi 6d. For the stamp in Image 3, Muller says it is Mi 6f, but Schulz says it is Mi 6e [2]. These examples are sufficient to show the difficulty one might have in distinguishing these issues. [3]



Image 2



Image 3

To orient the reader, here are descriptions of these eight issues taken primarily from Hellmuth Lemberger's 1970 monograph on Helgoland philately [4].

Mi 6a, 6b: Mi 6a is a bluish green and carmine on white wove paper; printing is sharp. Mi 6b is a somewhat darker, but still blue green; framelines tend to be broken in places or run together. Under UV light, Mi 6a shows a characteristic bright olive, whereas Mi 6b is a much darker, duller shade.

Mi 6c: Also on white wove paper, Mi 6c is an olive-green ranging from bright olive to dark-ish green. Under magnification, the green seems to be thick and laid on much as icing on a cake. The red is also carmine, though often not as dark as Mi a,b. Framelines are sharp.

Mi 6d: A smearable or foggy yellow green on wove paper. The red is *dull rose* [German “blass-rosa”] which virtually defines this printing; though the red is usually a porous rose, it can be a bit darker, but always rose.

Mi 6e: Again, an olive green ranging from very dark to lighter. The red is carmine similar to the earlier printings. Framelines are also fairly sharp. The paper is often thin so lettering shows through to the backside more so than other issues.

Mi 6f: Carmine red similar to other issues. The green shows a slight bit of yellow but not as much as say, Mi 6d, just a hint.

Mi 6g, 6h: Both are printed on *quadrille paper* so are easily distinguishable from their earlier cousins. Mi 6h is quite a bit sharper of the two printings, rarely having broken framelines or lettering. Mi 6g is printed more roughly and typically has a considerably darker (carmine) red.

One can see in the above quite a number of descriptives which do not have definite meanings, such as “fairly”, “yellowish”, “darker”, “more so”, “foggy” and so on, which may be interpreted differently depending on one's experience, color discrimination and so on. For this reason, I decided to see if there was an objective way to distinguish these issues from the light reflected by the stamp. As many unused and pristine copies of the Mi 6 issues available were taken to the Smithsonian Institution in Washington D.C. for examination using their Video Spectral Comparator (VSC) [5]. The VSC shines white light on a stamp, then analyzes the reflected spectrum of light from small areas [Image 4]. The result is a graph of (relative) intensity versus wavelength with wavelengths ranging from



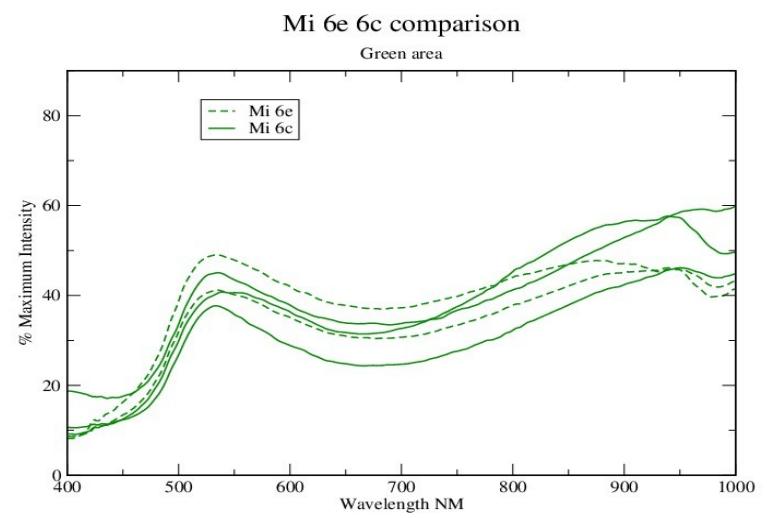
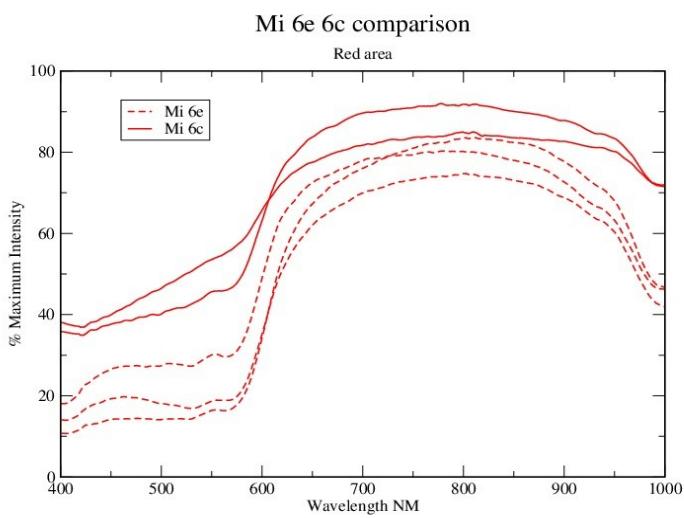
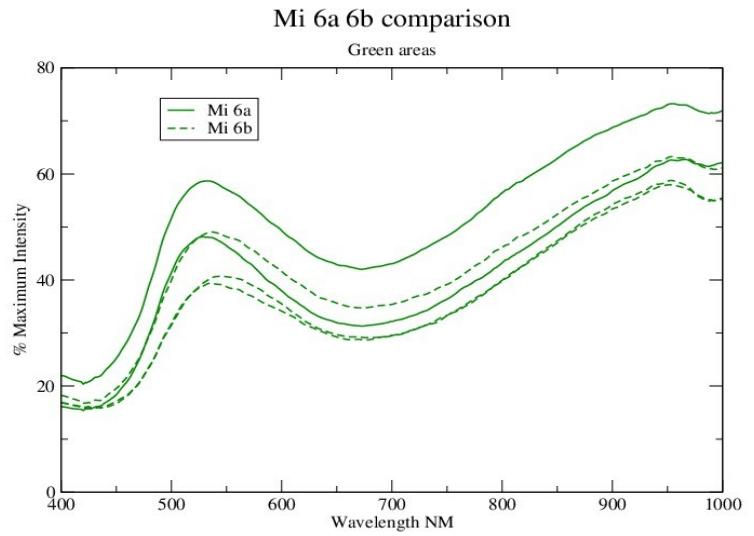
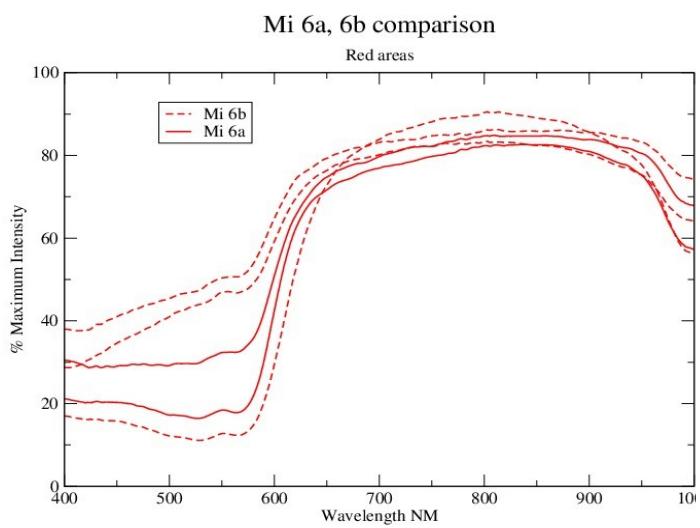
Image 4: Areas of examination of reflected light by the VSC

400 nanometers (nm), which is just above ultraviolet, to 1000 nm. A little over 700 nm is the extent of visible light, above that being infra-red (to 1500 nm).

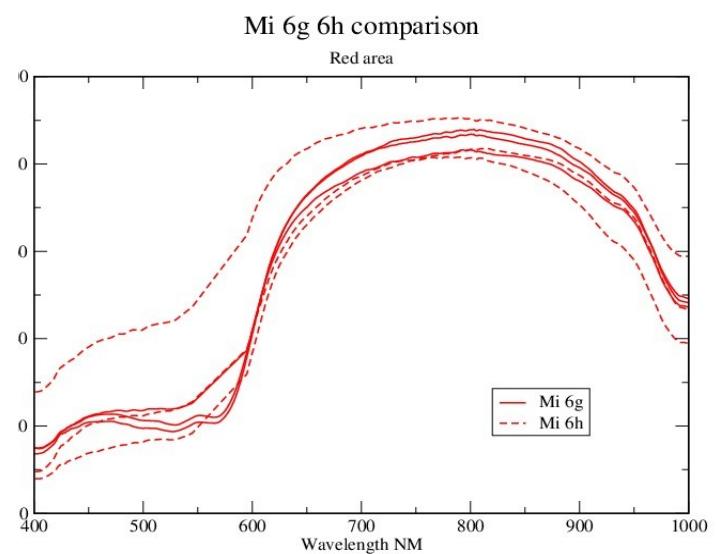
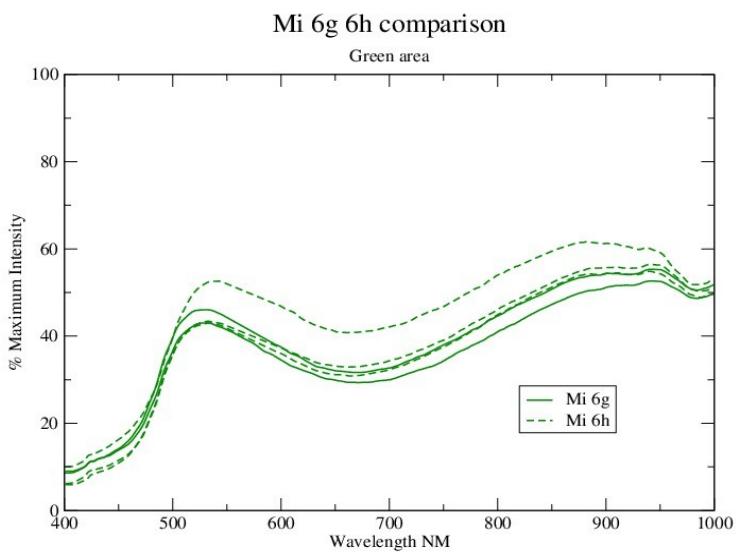
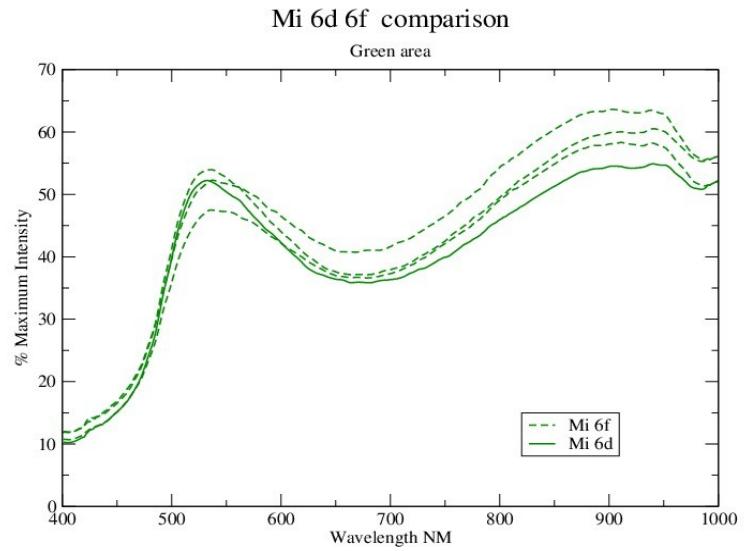
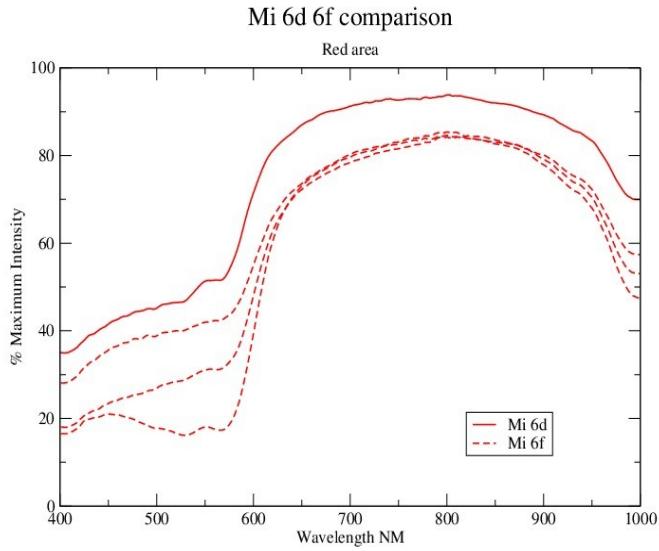
By and large, as we will see shortly, the results were negative. Images 5-12 (see end pages) show the spectra in the red area and the green area reflectances (separately) for respectively Mi 6a vs Mi 6b (all comparisons in red and in green), Mi 6c vs 6e, Mi 6d vs Mi 6f, and lastly Mi 6g vs Mi 6h. The reasons for the pairings are in the descriptions of the issues above which are most often confused.

Conclusions: In but two possible cases can we be reasonably sure that one can distinguish two close printings: that is Mi 6d vs 6f, and Mi 6e vs Mi 6c. In the former case, Mi 6d is much more reflective in the red area, over all wavelengths including infra-red than is any of the copies of Mi 6f we had. In the latter case, Mi 6e was the more reflective in the red than Mi 6c. We tentatively conclude, however, that reflected light spectra are in themselves only minimal help for these printings. There is just too much overlap in reflectances as shown in the graphs. Ideally, we would have liked to have subtracted off the reflectance of the unprinted paper (from selvedge); white paper is highly reflective in the infra-red in particular. However, selvedge is tough to find (sheets would be best) and time was very limited on the VSC. Of course, one has other characteristics to go by, such as quality and sharpness of print, and, in one case only, response to UV light. However, even there we have comparators: how sharp? how bright? how broken? There are still subjective comparisons required and thus expert judgement, which we have seen can still be incorrect or biased. Colorwise, this is not the end of the story of these issues. Also taken was X-ray Flourescence Data for the same issues which will be analyzed elsewhere.

Images 5-8: VSC graphs of relative intensity vs. wavelength (nm)



Images 9-12: VSC graphs of relative intensity vs. wavelength (nm)



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Notes and References -

1. K-H. Schulz was a BPP examiner until his retirement in 2004. Jens Muller is still an active independent examiner with a sterling reputation for Helgoland.
2. In the author's opinions, the stamp in Image 2 is indeed Mi 6d, and in Image 3 it is Mi 6e. Thus, each one was right once and wrong once.
3. Here, we assume that one has identified the stamp as genuine original stamp and not one of the bogus reprintings that exist; those have their own problems and are not considered here.
4. Hellmuth Lemberger, *Helgoland Philatelie*, Hamburg, 1970 [in German].
5. Thanks to Ms. Susan Smith for her help in using the VSC.