

NWA 2800 – 686 grams
Enriched Basaltic Shergottite



Figure 1: Photo of NWA2800 by A. Aaronson.

Introduction

Bunch et al. (2008) announced another large basaltic rock from Mars – NWA2800 – that appears to be similar to the Los Angeles specimens. It has a coarse ophitic texture with preferred orientation of intergrown elongate grains of plagioclase and pyroxene (figure 2). It is apparently “complete and lightly weathered with significant desert ablation”.

Mineralogical Mode for NWA2800

	Bunch et al. 2008
Plagioclase	47 vol. %
Pyroxene	39
Symplectite	10
Residuum	2
Oxides	2

Petrography

NWA2800 is very coarse-grained with ophitic to subophitic texture with oriented elongated crystals and patches of what was apparently pyroxferroite (now

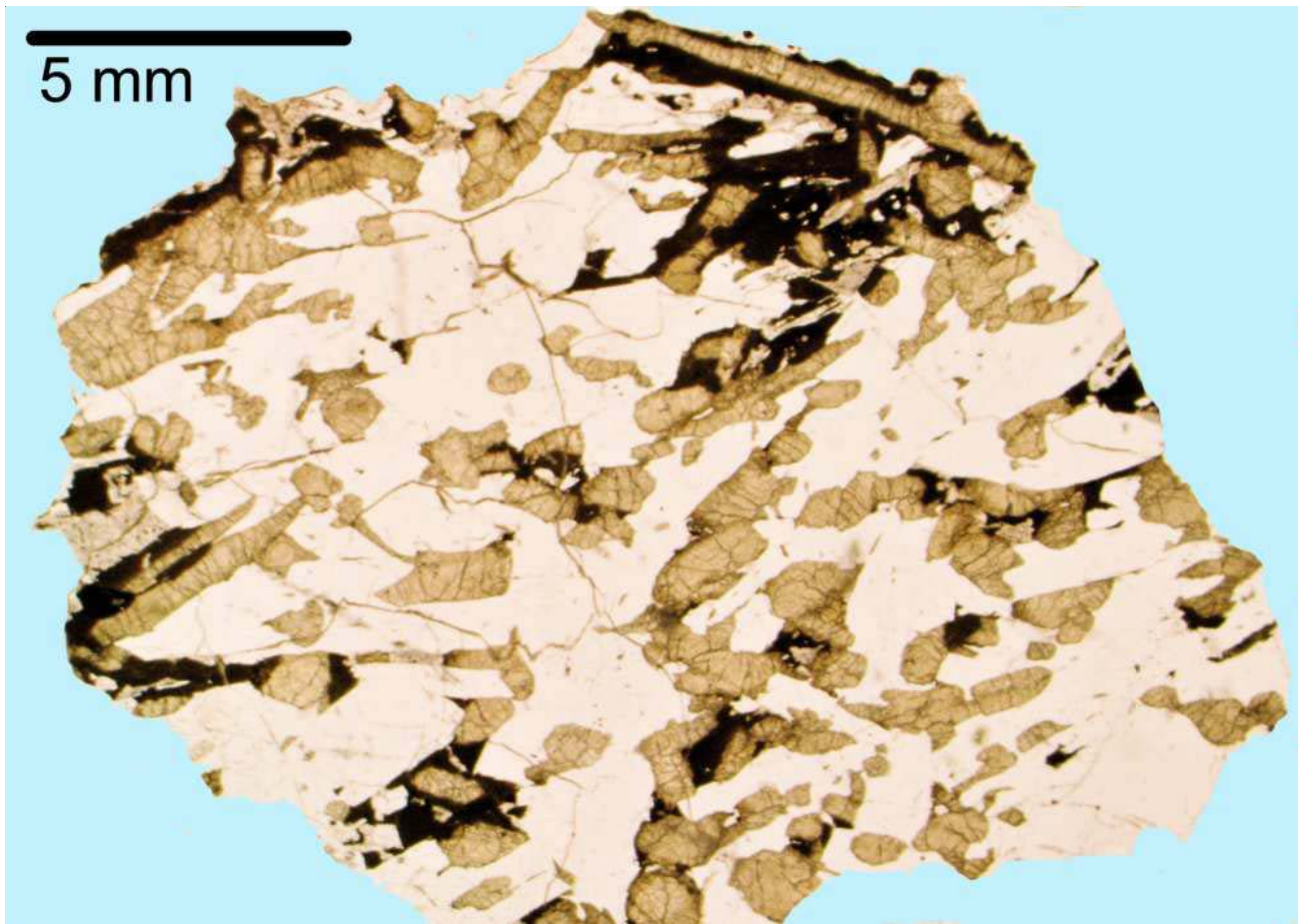


Figure 2: Photomicrograph of thin section of NWA 2880 (Bunch et al. 2008).

converted to a symplectic intergrowth). Plagioclase (now shocked to maskelynite) and pyroxene crystals are up to 6-7 mm long. Pyroxene is chemically highly zoned (figure 3).

Interstitial patches of late-stage residuum are adjacent to patches of symplectite (presumed breakdown of pyroxferroite). The late-stage minerals include silica-plagioclase graphic intergrowths, fayalite and K-spar while the complex symplectite intrgrowths include fayalite, pyroxene, silica with minor phosphates, opaques, sulfides and silica glass (Bunch et al. 2008).

Isotopes

Rumble and Irving (2009) have reported oxygen isotopes (Delta ¹⁷O is 0..25‰).

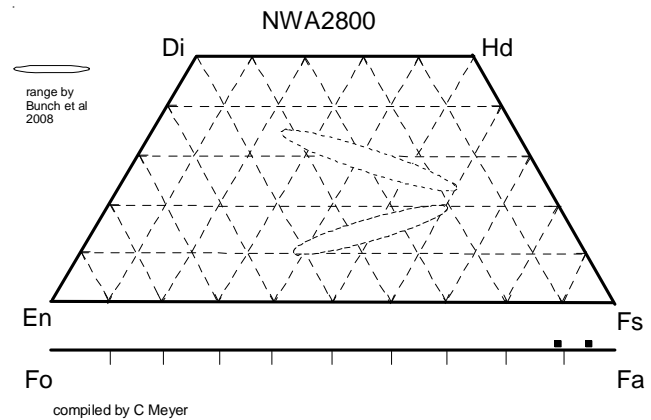


Figure 3: Olivine and pyroxene composition in NWA 2800 (sketched from data given in Bunch et al. (2008).

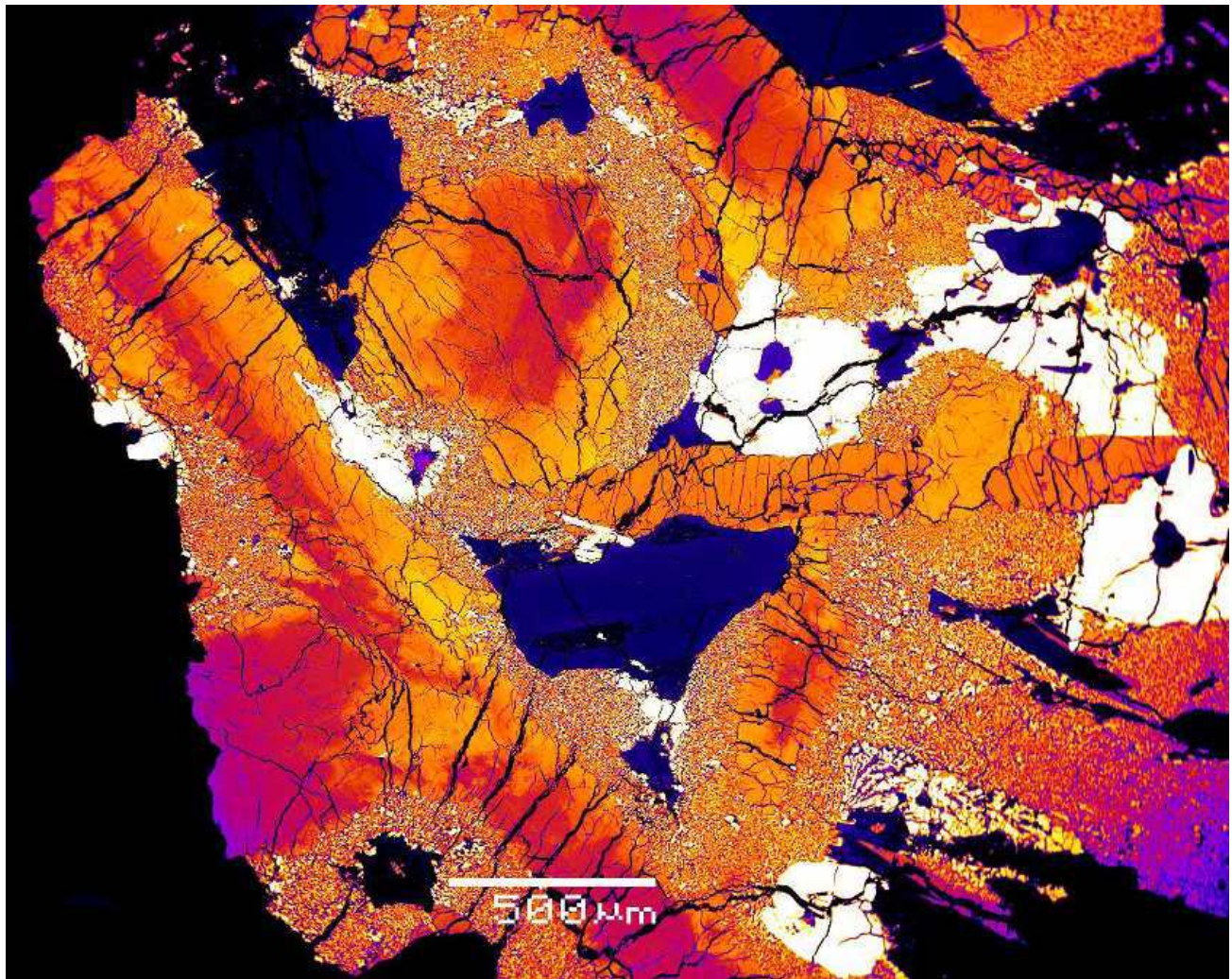


Figure 4: False-color image of back-scattered-electrons from thin section of NWA2800 (Bunch et al. 2008). Bright-colored zoned minerals are pyroxene. White is ulvospinel. Speckled regions are decomposed pyroxferroite.

References for NWA2800

- Bunch T.E., Irving A.J., Wittke J.H. and Kuehner S.M. (2008) Highly evolved basaltic Shergottite Northwest Africa 2800: A clone of Los Angeles (abs#1953). *Lunar Planet. Sci.* **XXXIX**, Lunar Planetary Institute, Houston.
- Connolly H.C. and 7 authors (2007c) The Meteoritical Bulletin, No. 93, 2008 March. *Meteorit. & Planet. Sci.* **43**, 571-637.
- Franz H.B., Farquhar J. and Irving A.J. (2010) Acid volatile sulfur isotopic composition of seven Shergottites from Northwest Africa (abs#2341). *Lunar Planet. Sci.* **XLI**. Lunar Planetary Institute Houston.
- Rumble D. and Irving A.J. (2009) Dispersion of oxygen isotopic compositions among 42 Martian meteorites determined by laser fluorination: Evidence for assimilation of (ancient) altered crust (abs#2293). *Lunar Planet. Sci.* **XL**, Lunar Planetary Institute @ The Woodlands.

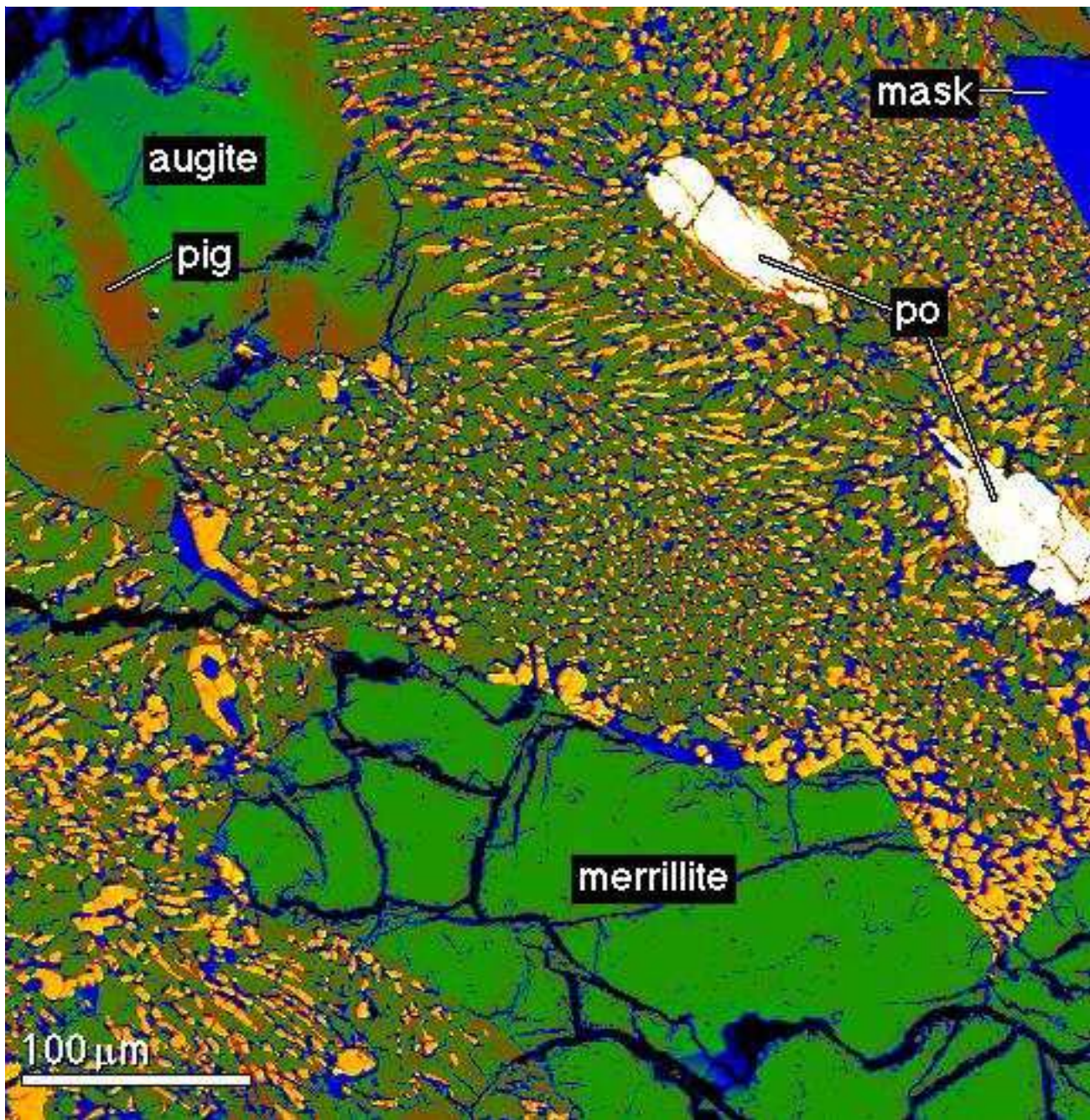


Figure 5: Symplectite intergrowth in NWA2800 (Bunch et al. 2008).