



AVAST Survey 0.4-1.0 μm Spectroscopy of Igneous Asteroids in the Inner and Middle Main Belt

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(Submitted on 20 Feb 2012 (v1), last revised 30 May 2012 (this version, v2))

We present the spectra of 60 asteroids, including 47 V-types observed during the first phase of the Adler V-Type Asteroid (AVAST) Survey. SDSS photometry was used to select candidate V-type asteroids for follow up by nature of their very blue $i-z$ color. 47 of the 61 observed candidates were positively classified as V-type asteroids, while an additional six show indications of a 0.9 μm feature consistent with V-type spectra, but not sufficient for formal classification. Four asteroids were found to be S-type, all of which had $i-z$ values very near the adopted AVAST selection criteria of $i-z \leq -0.2$, including one candidate observed well outside the cut (at a mean $i-z$ of -0.11). Three A-type asteroids were also identified. Six V-type asteroids were observed beyond the 3:1 mean motion resonance with Jupiter, including the identification of two new V-type asteroids (63085 and 105041) at this distance. Six V-type asteroids were observed with low ($< 5^\circ$) orbital inclination, outside of the normal dynamical range of classic Vestoids, and are suggestive of a non-Vesta origin for at least some of the population.

Comments: 1 table, 3 figures, To appear to Icarus

Subjects: **Earth and Planetary Astrophysics (astro-ph.EP)**

Cite as: **arXiv:1202.4424 [astro-ph.EP]**

(or **arXiv:1202.4424v2 [astro-ph.EP]** for this version)

Submission history

From: Michael Solontoi [[view email](#)]

[v1] Mon, 20 Feb 2012 19:06:15 GMT (520kb)

[v2] Wed, 30 May 2012 16:16:36 GMT (373kb)

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