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About A-asteroid material

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The subject of our work is the faint absorption bands, discovered in the visible range of A-asteroid reflected spectra from the spectral catalogues SMASS and S3OS2. Investigation of these bands shows that current point about predominance of olivine on the A-asteroid surfaces is, at least, incomplete. There are both olivine and calcium-rich clinopyroxene on some A-asteroids, whereas clinopyroxene with minor amount of chromium-containing minerals, presumably chromite, appears to be on the others. With some certainty we can say about only two asteroids (289 Nenetta and 4982 Bartini) of 37 studied that olivine predominates over other minerals on their surfaces at spectral observation moment. As we believe, remark about time observation is essential, because a shape of an olivine feature near 625 nm changes in the Nenetta spectra observed in various oppositions and, consequently, material composition seems to change across the asteroid surface. It is unclear now if this property inheres in other A-asteroids. The forsterite content in olivines of 289 Nenetta and 446 Aeternitas has been estimated with an absorption feature near 500 nm to be 50 - 60 %, and is close to recent estimation based on our modeling the reflectance spectra of Aeternitas (40 - 56%).