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**Title:** Backangle anomaly in scattering of alpha-particles from Si-28 at low energies **Author(s):** Coban, A; Khiari, FZ; Abdelmonem, MS; Aksoy, A; Naqvi, AA **Source:** NUCLEAR PHYSICS A 678 (1-2):3-10 Art No. ISSN 0375-9474 2000

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**Abstract:** In order to resolve the differences in time literature on the existence of quasimolecular states in the alpha-Si-28 system, excitation functions were measured for the scattering of alpha-particles from Si-28 in the incident energy range E-lab = 3-7.8 MeV. An angular distribution measurement was carried out in the angular range theta(lab) = 30degrees-174.5 degrees for every potential resonance observed in the excitation functions. Data was analysed using a Regge-pole formalism by coherently adding specific resonances to an underlying diffraction term calculated by a strong absorption model. Furthermore, the usual compound elastic contribution was incoherently added to the direct interaction part of the cross section. The 6.8 MeV resonance was confirmed with J = 3 and some evidence was observed for a J = 1 resonance around 6.0 MeV. (C) 2000 Elsevier Science B.V. All rights reserved.