Laser fluorescence excitation spectra of the SiAr van der Waals complex, in the vicinity of the Si $^3D^o \leftarrow ^3P$ atomic resonance transition near 220.7 nm are reported. At low resolution, a single excited state ($^3\Sigma^-$) progression of bands terminating in a dissociation continuum is observed. Several weaker bands associated with many of these strong bands are found in scans at higher resolution. A transition to an excited $^3\Sigma^-$ state which correlates with the excited Si($^3D^o$)+Ar asymptote was assigned, and a rotational and vibrational analysis of the observed bands was carried out. The dissociation energies of the ground and excited states were determined [D$_g^0 = 178.8 \pm 0.4$ and D$_e^0 = 122.5 \pm 0.4$ cm$^{-1}$]. Ab initio calculations of the SiAr $^4\Sigma^-$ and $^4\Pi$ electronic states correlating with the ground-state Si($3s^23p^2\,^3P$) + Ar asymptote were also carried out. The potential energy curves of the definite-$\Omega$ states were computed and used to estimate the dissociation energy, rotational constant, and phenomenological spin-spin interaction in the $^4\Sigma^-$ state. These parameters were found to be in reasonable agreement with the experimental determinations.