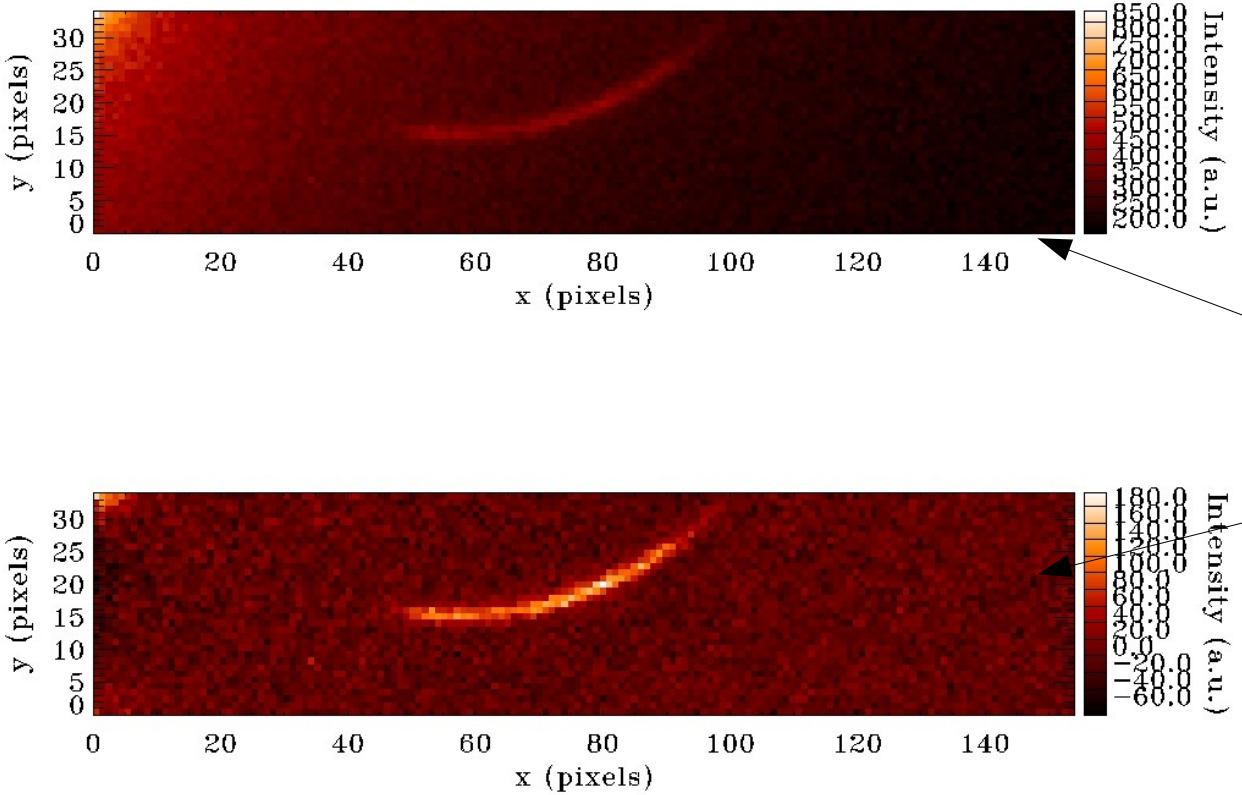
Measurement of Linear Polarization in Venus Atmosphere (work in progress)

- scattering of sunlight by Venus mesosphere expected to produce some amount of linear polarization
- difficult to observe due to phase angle close to 180° + instrument defects & limb polarization
- during Venus transit side camera took I+/-U and I+/-Q in continuum, at cadence of 3.75 s (horizontal linear polarization seen from the instrument is I + Q, while I + U is polarization at 45° counterclockwise from horizontal (Schou et al., 2012))



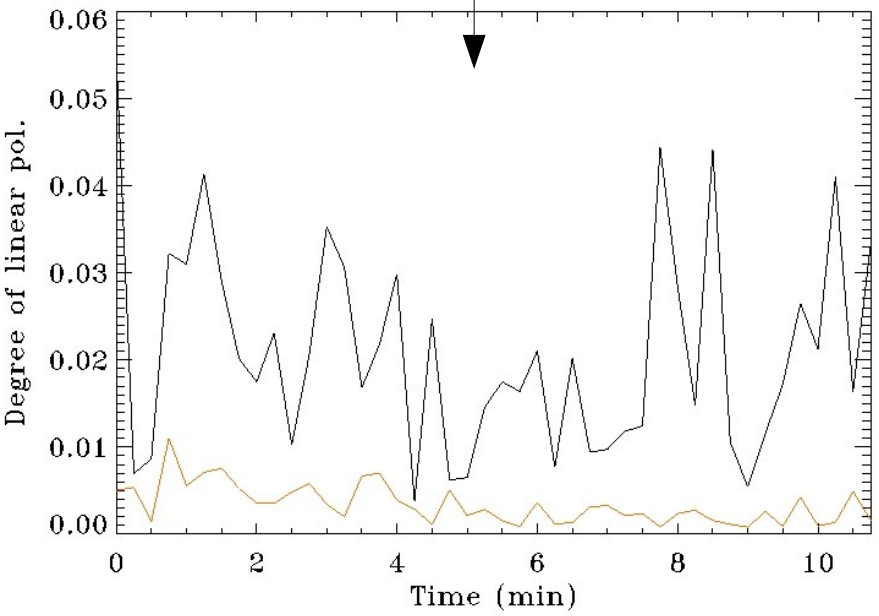
Venus observed during ingression outside solar disk. Average aureole intensity measured.

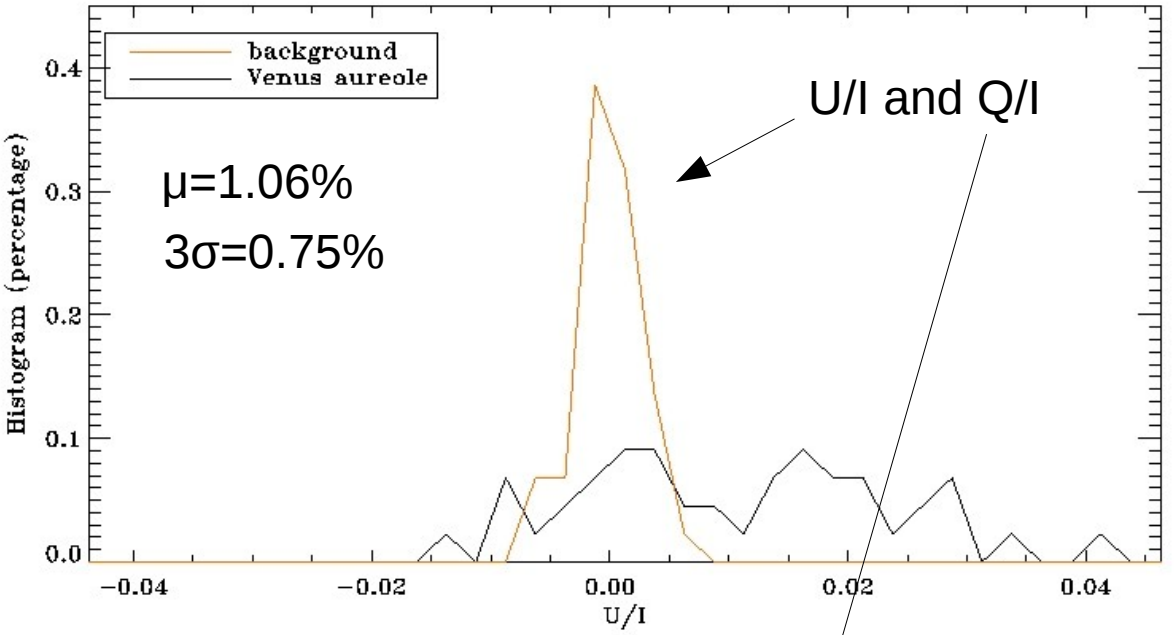
Raw level 1 images

Background removed, cosmic ray hit removed

Result of average linear polarization measurement

Degree of linear polarization $\sqrt{(U^2+Q^2)}/I$
Average = 2.11% (background: average = 0.34% and σ=0.22%)





U/I and Q/I