

Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

X-ray emission from planet Venus. Comparison with Chandra observations. VITALI SHAPIRO, UC San Diego Physics Department, KEVIN QUEST, UC San Diego ECE Department, ROBERT BINGHAM, Rutherford Appleton, Didcott, UK — It is a goal of the presentation to show that recently observed X-ray emission from non-magnetic planets Venus and Mars (Ref. 1) can be explained by the same mechanism that was originally proposed for explanation of X-ray emission from comets (Ref. 2), namely as combination of Bremsstrahlung and line K shell radiation produced in interaction of energetic electrons with neutral atmosphere. It is argued that fluorescence of solar X-rays in no way cannot be the source of the observed emission. Numerical simulation are presented that show how energetic electrons can be produced by modified two stream instability developing in planetary mantle as the result of interaction of counterstreaming plasma populations - solar wind and ionospheric cold plasma. Comparison with experimental data is also carried out. 1) Dennerel et al Astronomy and Astrophysics, 386, 319, 2002 2) Bingham et al Science, 275, 49, 1997 Shapiro et al J Geophys, Res, 104, 2587, 1999

Vitali Shapiro
UC San Diego Physics Department

Date submitted: 21 Jul 2006

Electronic form version 1.4