Science with Pégase

A. Léger[1], M. Ollivier[1], D. Rouan[2], V. Coudé du Foresto[2], J. Schneider[2], D. Mourard[3], F. Cassaing[4], **Olivier Absil**[5], X. Leyre[6], F. Allard[7], F. Malbet[8], and S. Udry[9]

(Email: `Alain.Leger@ias.fr`)

[1]Institut d'Astrophysique Spatiale, CNRS, Université Paris-Sud, Orsay, France
[2]Observatoire de Paris, Meudon, France
[3]Observatoire de la Côte d'Azur, Nice, France
[4]Office National d'Etudes et de Recherches Aérospatiales, Châtillon, France
[5]Astrophysique Extragalactique et Observations Spatiales, Université de Liège, Liège, Belgium
[6]Alcatel Space, Cannes, France
[7]École Normale Supérieure de Lyon, Lyon, France
[8]Laboratoire d'Astrophysique, Observatoire de Grenoble, Grenoble, France
[9]Observatoire de Genve, Sauverny, Switzerland

Pégase is an answer to the CNES call for ideas for a scientific payload on its Vol en Formation (formation flying) technological mission. It proposes a Bracewell interferometer operating in the visible and the IR (1.5 to 6 μm). It has small telescopes (40 cm) but a substantial baseline (25 to 500 m, and 1000 m for a few targets). Its angular resolution is 1 milliarcsec at 4 μm and 100 microarcsec at 0.4 μm. Its main scientific objectives are the spectroscopic study of weak companions including pegasides and brown dwarfs bound to other stars. The goal is determining the composition of the atmospheres of these objects as well as their cloud structure.