J/A+A/584/A72 A transiting rocky planet at 6.5pc from the Sun (Motalebi+ 2015)

The HARPS-N Rocky Planet Search.I. A transiting rocky planet in a 4 planet system at 6.5 pc from the Sun.

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=2015A&A...584A..72M (SIMBAD/NED BibCode)

ADC_Keywords: Stars, double and multiple ; Planets ; Radial velocities

Keywords: techniques: radial velocities - techniques: photometric - stars: individual: HD 219134 - binaries: eclipsing - instrumentation: spectrographs

Abstract:
We know now from radial velocity surveys and transit space missions that planets only a few times more massive than our Earth are frequent around solar-type stars. Fundamental questions about their formation history, physical properties, internal structure, and atmosphere composition are, however, still to be solved. We present here the detection of a system of four low-mass planets around the bright (V=5.5) and close-by (6.5pc) star HD 219134. This is the first result of the Rocky Planet Search programme with HARPS-N on the Telescopio Nazionale Galileo in La Palma. The inner planet orbits the star in 3.0935±0.0003-days, on a quasi-circular orbit with a semi-major axis of 0.0382±0.0003AU. Spitzer observations allowed us to detect the transit of the planet in front of the star making HD 219134 b the nearest known transiting planet to date.

Description:
We obtained 98 spectra of HD219134 using the HARPS-N spectrograph. Our RV data are provided online.
spitzer.dat contains the photometric time-series presented in the paper for HD219134 and gathered by the IRAC instrument aboard the Spitzer telescope in its channel 2 (4.5 microns) on 2015-04-14.

Objects:

RA (2000)	DE	Designation(s)
23 13 16.98	+57 10 06.1	HD 219134 = HR 8832

File Summary:

FileName	Lrecl	Records	Explanations
ReadMe	80	.	This file
table6.dat	45	97	List of undetected sources. The typical detection limit (3σ level) is 3Jy
spitzer.dat	68	9396	Spitzer channel 2 (4.5 microns) photometry

Byte-by-byte Description of file: table6.dat

Bytes	Format	Units	Label	Explanations
1- 12	F12.6	d	BJD	Barycentric Julian Date (BJD-2400000)
14- 22	F9.5	km/s	RV	Radial velocity
24- 30	F7.5	km/s	e_RV	Uncertainty in RV
32- 38	F7.4	[-]	logR'HK	The logR'HK chromospheric activity value
40- 45	F6.4	[-]	e_logR'HK	Uncertainty in logR'HK

Byte-by-byte Description of file: spitzer.dat

Bytes	Format	Units	Label	Explanations
1- 14	F14.6	d	BJD	Barycentric Julian Data (UTC), middle of the 64 subarray exposures.
16- 22	F7.5	---	Flux	Normalized flux
24- 30	F7.5	---	e_Flux	Normalized flux error
32- 38	F7.4	pix	Xpos	X position
40- 46	F7.4	pix	Ypos	Y position
48- 54	F7.4	pix	FWHMX	PSF Full-Width at Half-Maximum along X

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  56- 62  F7.4  pix      FWHMY     PSF Full-Width at Half-Maximum along Y
  64- 68  F5.2  ---      Bg        Background (in ADU units)
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(End) Patricia Vannier [CDS] 15-Oct-2015

*The document above follows the rules of the Standard Description for Astronomical Catalogues; from this documentation it is possible to generate **f77** program to load files into arrays or line by line*