Debris Disk HD 120326
(HIP 67497)

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Info: I did not have the time to work on this project since last telecon, due to the JWST Cycle 2 deadline, and finalizing the draft of another project. I will take time starting next week to work on the debris disk HD 120326.
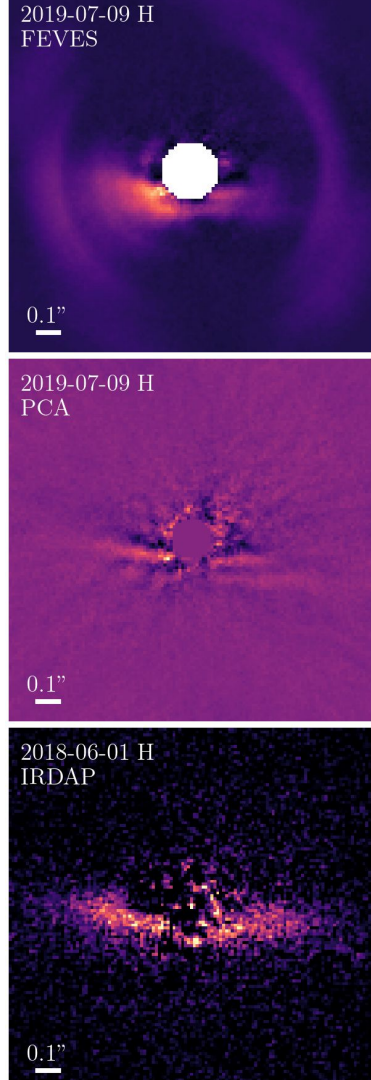

2019-07-09 H
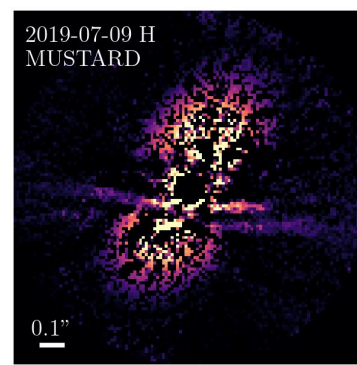FEVES
0.1"

2019-07-09 H
PCA
0.1"

2018-06-01 H
IRDAP
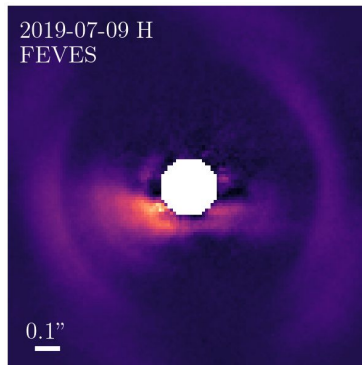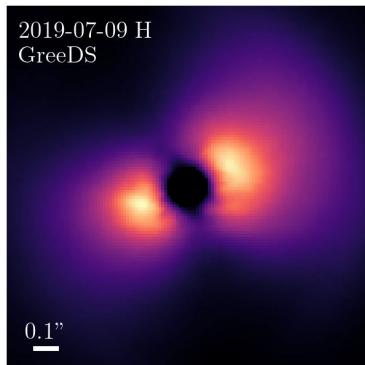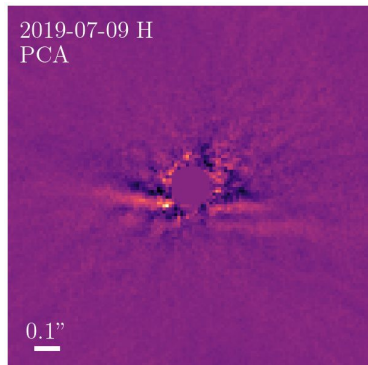0.1"

Status on the data reduction

1. Reduction of the best epoch (2022-07-09) in total intensity light:

- PCA ok
- GreeDS (*iterative PCA*, Sandrine Juillard, PhD Liège)
- FEVES (*cutting-edge PCA*, ongoing, Valentin Christiaens, Liège),
- MAYONNAISE (*Problem inverse approach*, but problem pipeline, and not maintained → no)
- MUSTARD (*Problem inverse approach,* done, Sandrine Juillard-
- REXPACO (*Problem inverse approach,* ongoing - Maud Langlois, CRAL, Lyon)
- sNMF (contacted Bill Ren, no reply, I will try to do it on my own.)

2 arcs!

Other actions

2. Reduction in polarized light:
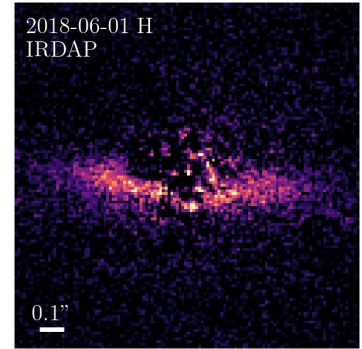
1. *IRDAP*
2. *Rhapsodie (ongoing, Maud Langlois)*

3. Forward modelling (+ iterations) **in the H-band** *(ongoing)*

1. Discussion and work with Julien Milli, Johan Mazoyer
2. Do first forward modelling on the polarized images (IRDAP reduction, 1 arc seen)
3. then forward modelling on the total intensity images (2 arcs seen in BB_H/H23)

4. Look into the Y and J-bands (IFS, + IRDIS J23)

5. Characterisation: Extraction of the reflectance; Photometry in Y, J and H, …; Morphology of the disk
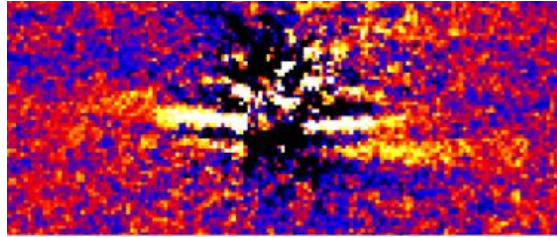
SPHERE Data available

epoch	mode	PI	quality	obslog	angles variation
2016-04-05	IRDIFS H23	M. Bonnefoy & F. Ménard	good	seeing = 1.1" tau0 = 3.5 ms	37°
2016-06-04	IRDIFS H23	S. Hinkley & E. Matthews	good	seeing = 0.71" tau0 = 3.1 ms	22°
2016-06-13	IRDIS J23	GTO	to check	to check	/
2018-06-01	IRDIS polar BB H	A. Boccaletti	(very) good	seeing = 0.45" tau0 = 4.2 ms	0° (field-stabilized mode)
2019-06-26	IRDIFS BB H	M. Bonnefoy & F. Ménard	40% frames reject (coronagraph miscentered)	seeing = 1.84" tau0 = 2.4 ms	36°
2019-07-09	IRDIFS BB H	M. Bonnefoy & F. Ménard	very good, best in total intensity light and H-band	seeing = 0.54" tau0 = 3.1 ms	58°

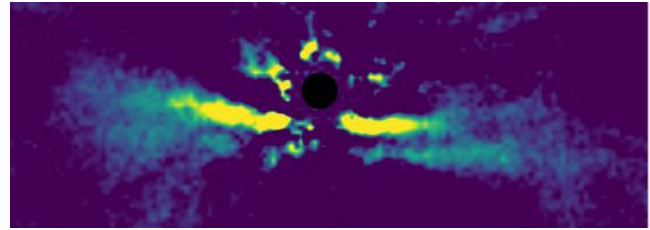# Summary on the PCA reduced images in H23 / BB_H

Before

(Bonnefoy+2017)

Now: best epoch 2019-07-09

Now: 3 epochs combined