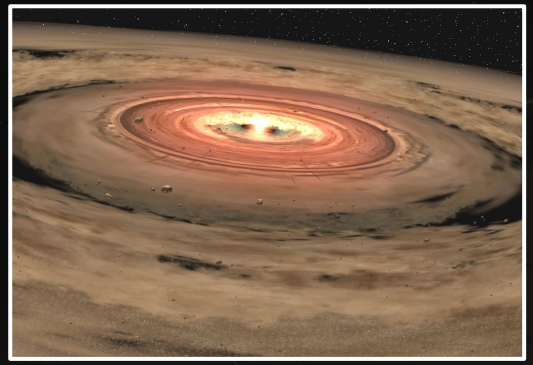
UKI Disc-ussion

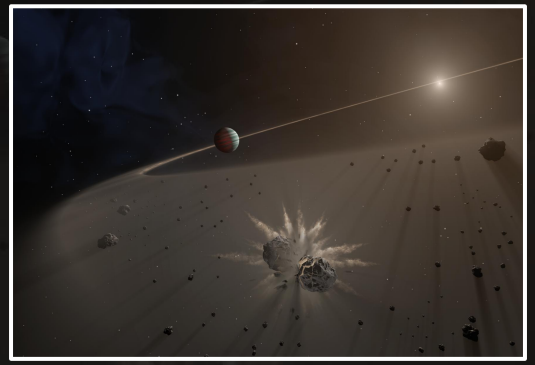
Image: NASA / JPL-Caltech

Protoplanetary



NASA/JPL-Caltech

Debris

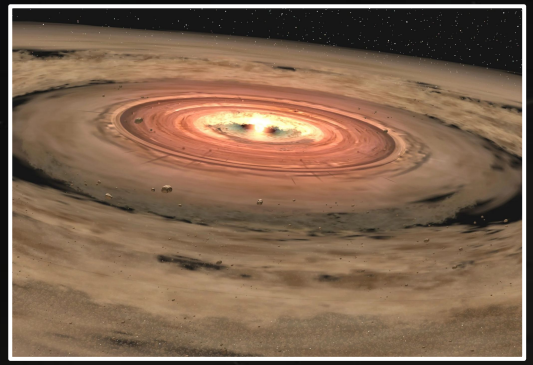


NASA/JPL-Caltech

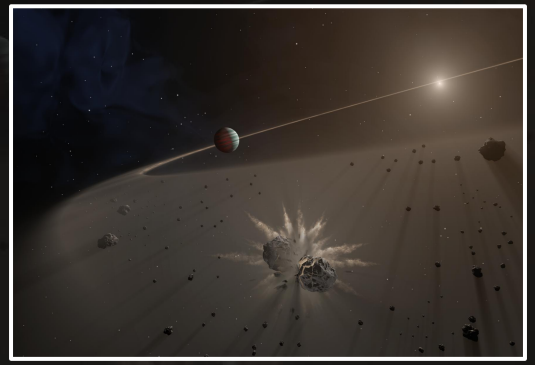
White dwarf

NASA, ESA, Joseph Olmsted (STScI)

Protoplanetary → Debris → White dwarf



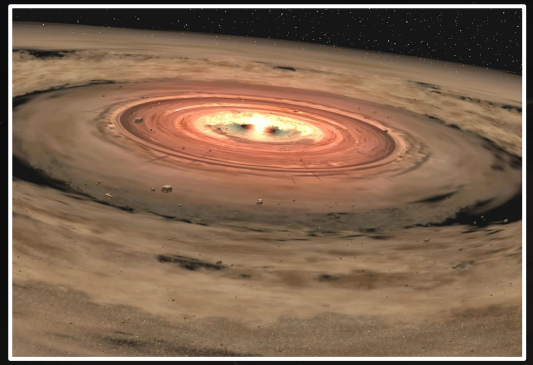
NASA/JPL-Caltech



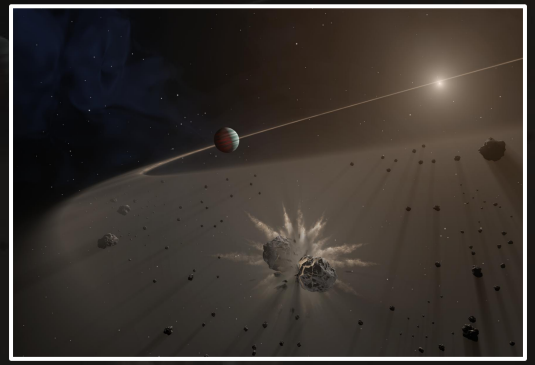
NASA/JPL-Caltech

NASA, ESA, Joseph Olmsted (STScI)

Protoplanetary → Debris → White dwarf



NASA/JPL-Caltech

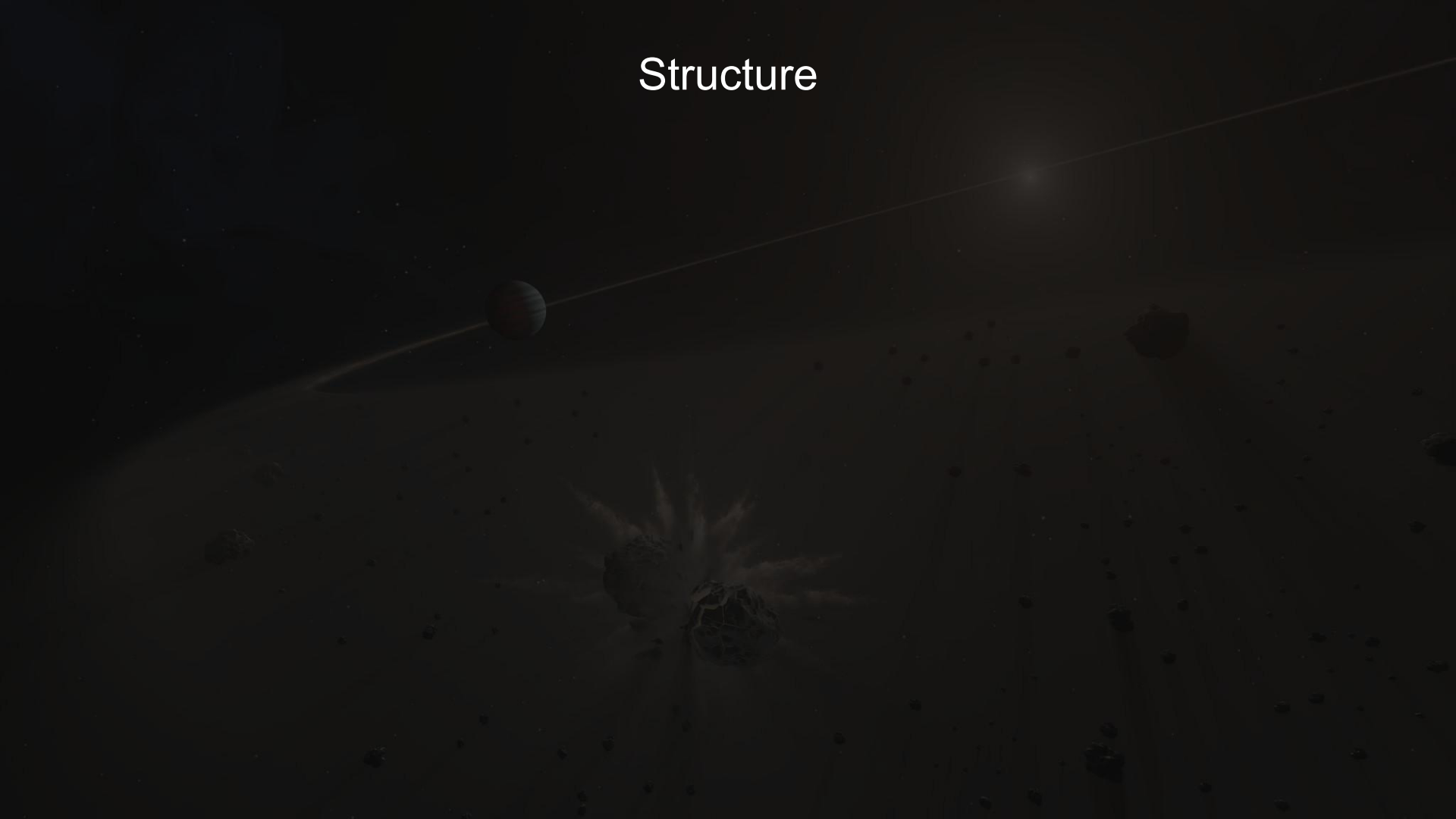


NASA/JPL-Caltech

NASA, ESA, Joseph Olmsted (STScI)

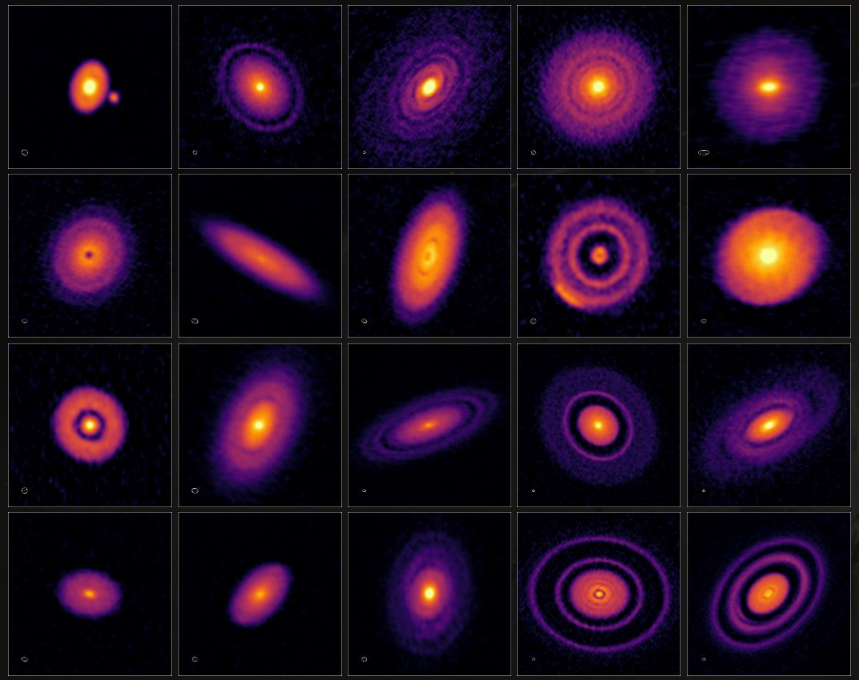
What can we learn by combining our knowledge?

Structure



Structure

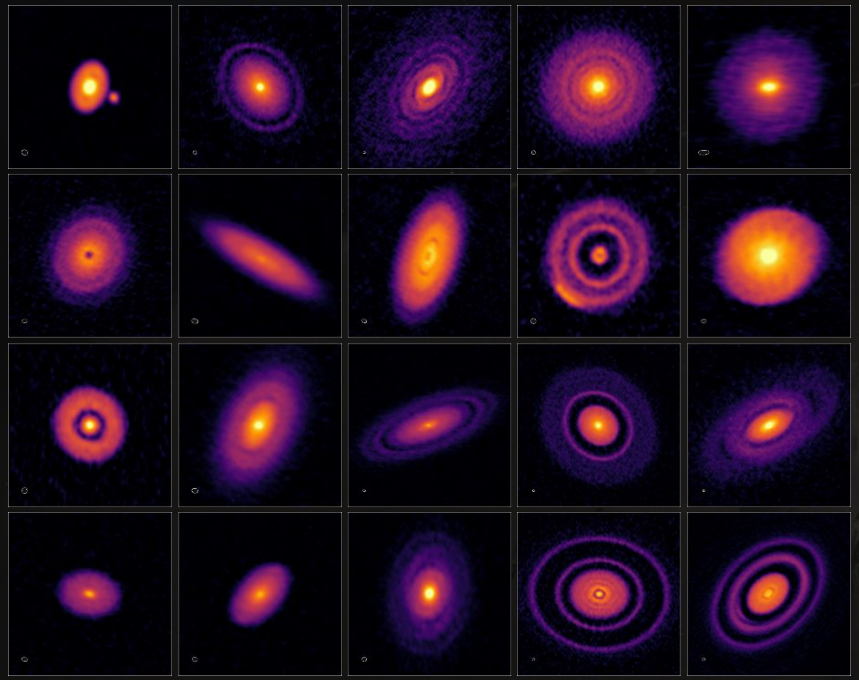
Protoplanetary discs



Andrews et al. (2018)

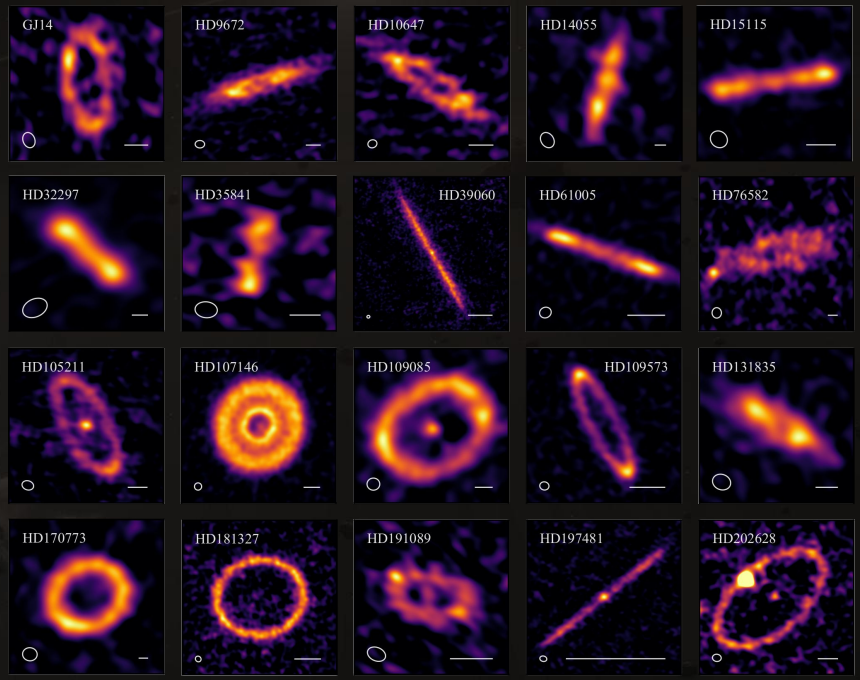
Structure

Protoplanetary discs



Andrews et al. (2018)

Debris discs

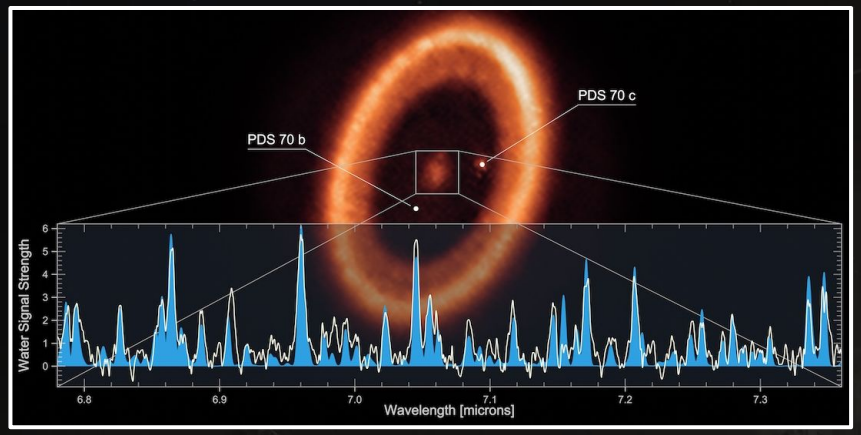


Matrá et al. (submitted)

Material compositions

Material compositions

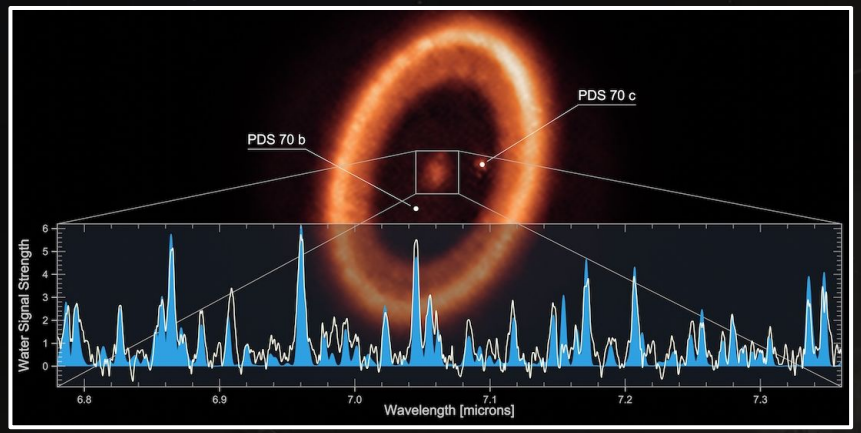
Protoplanetary



Thomas Müller / G. Perotti et al. (MINDS collaboration)

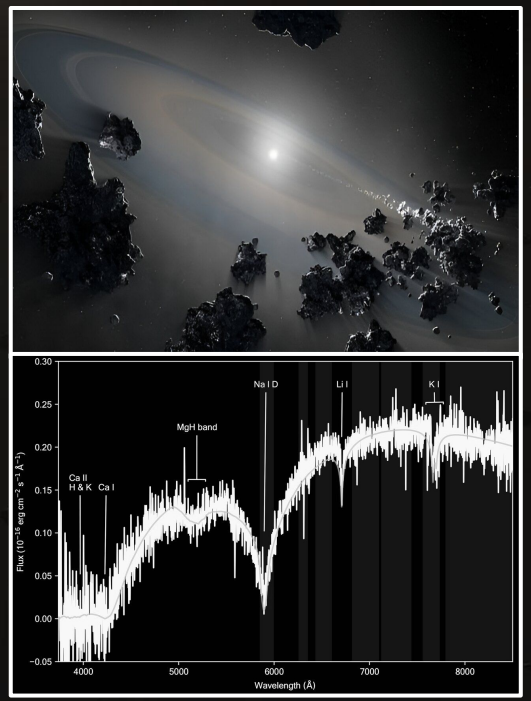
Material compositions

Protoplanetary



Thomas Müller / G. Perotti et al. (MINDS collaboration)

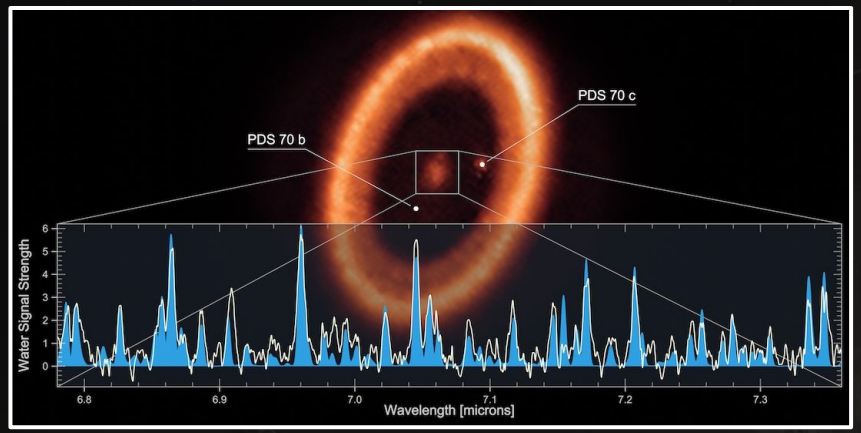
White dwarf



NASA, ESA, Joseph Olmsted (STScI)
Kaiser et al. (2020)

Material compositions

Protoplanetary



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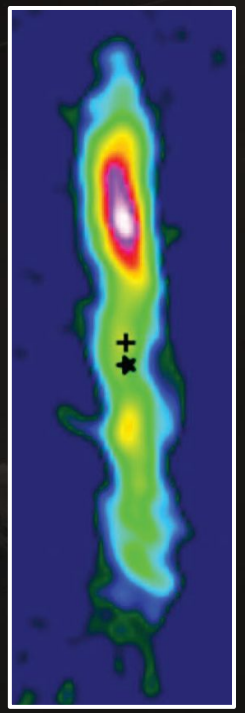
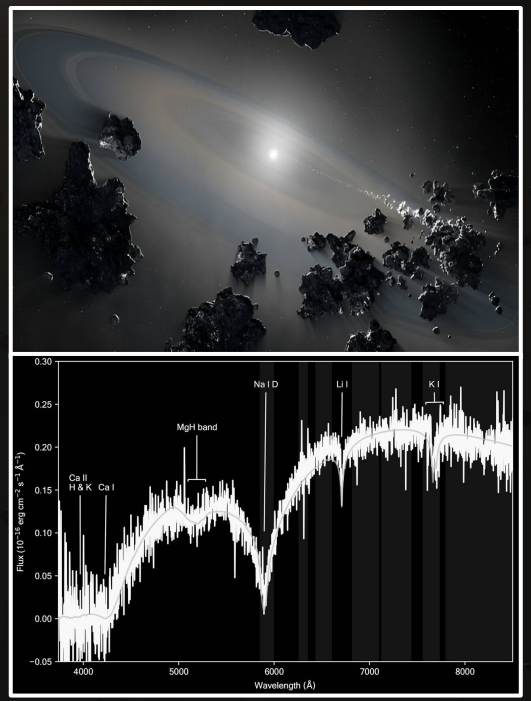
Debris



Dent et al. (2014)

White dwarf

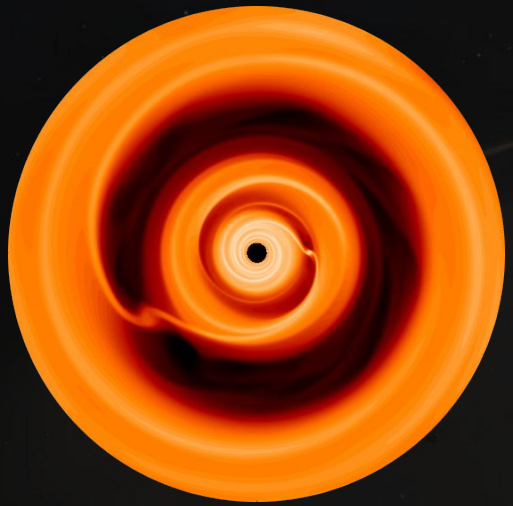


NASA, ESA, Joseph Olmsted (STScI)
Kaiser et al. (2020)

Planet migration

Planet migration

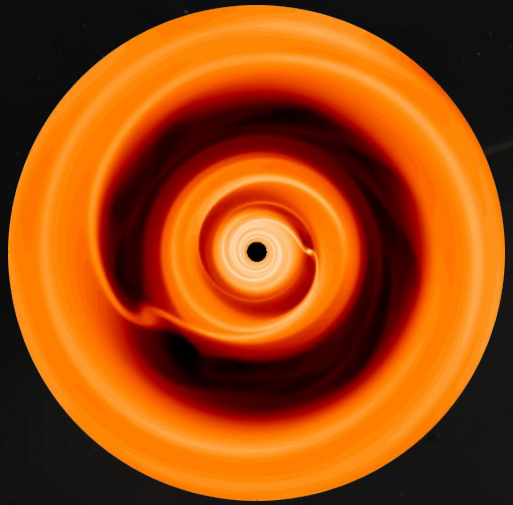
Protoplanetary disc



Sándor & Kley (2010)

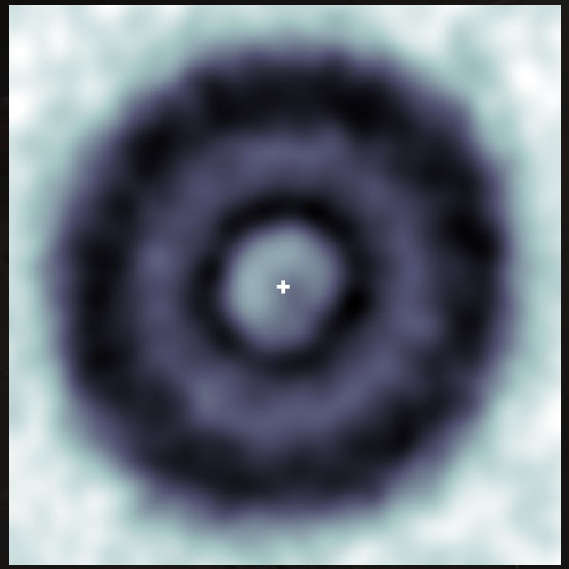
Planet migration

Protoplanetary disc



Sándor & Kley (2010)

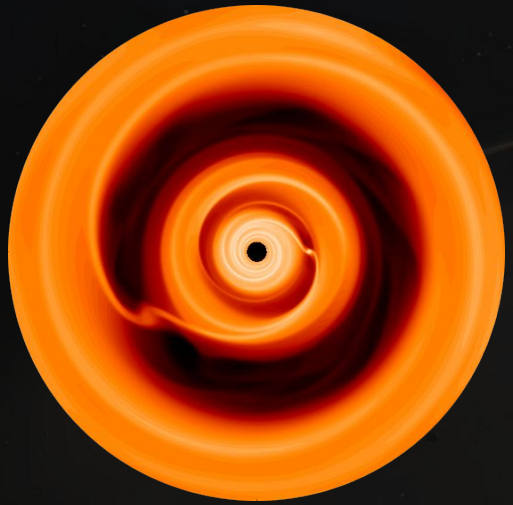
Debris disc



Marino et al. (2018)

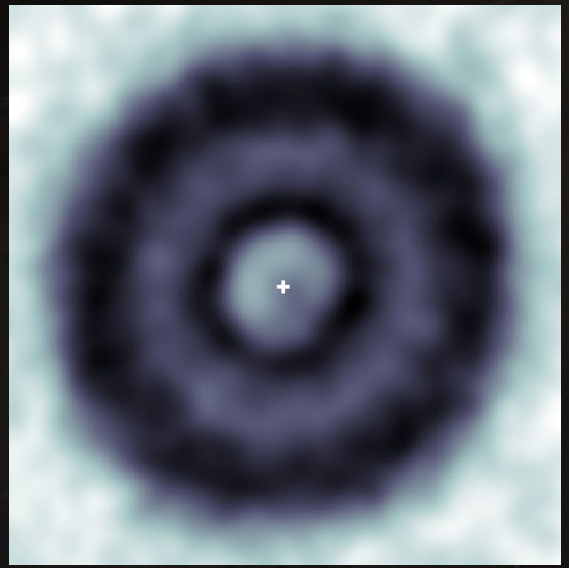
Planet migration

Protoplanetary disc



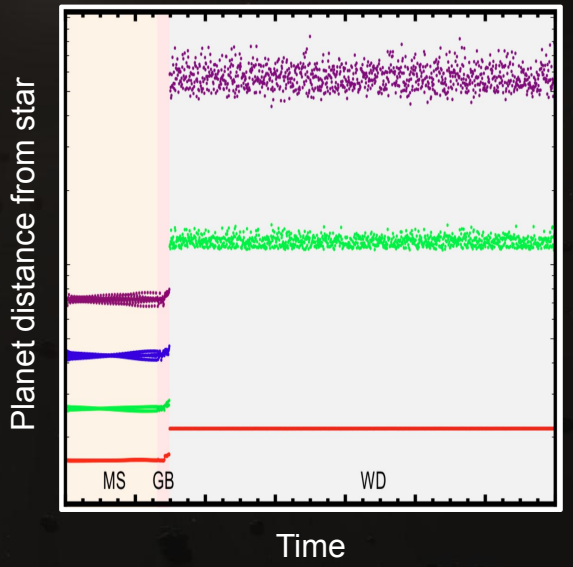
Sándor & Kley (2010)

Debris disc



Marino et al. (2018)

White dwarf

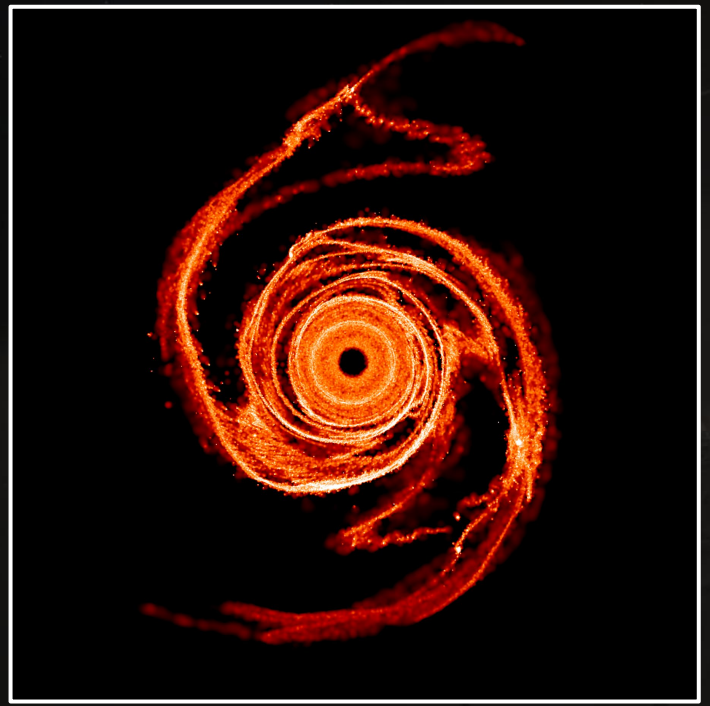


Veras & Hinkley (2021)

Calibrate models

Calibrate models

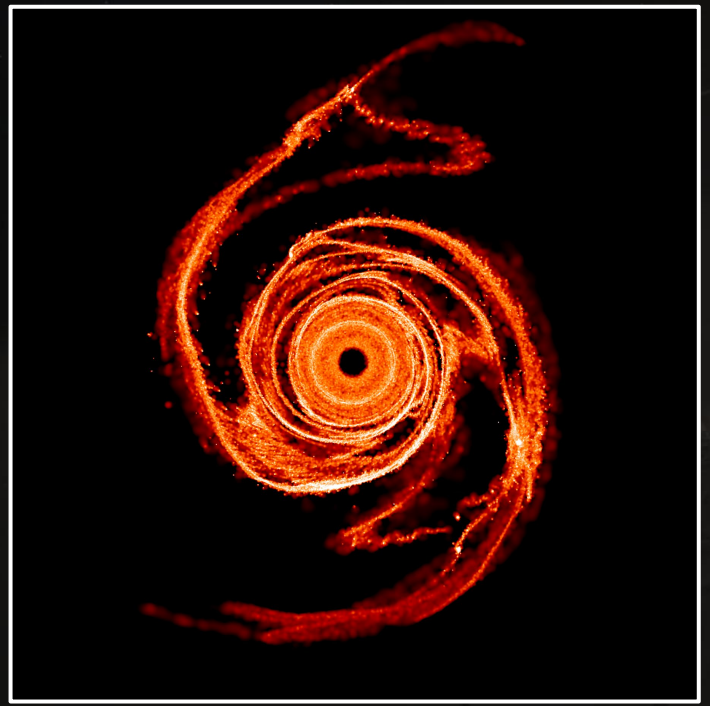
Protoplanetary disc



Rowther et al. (2024)

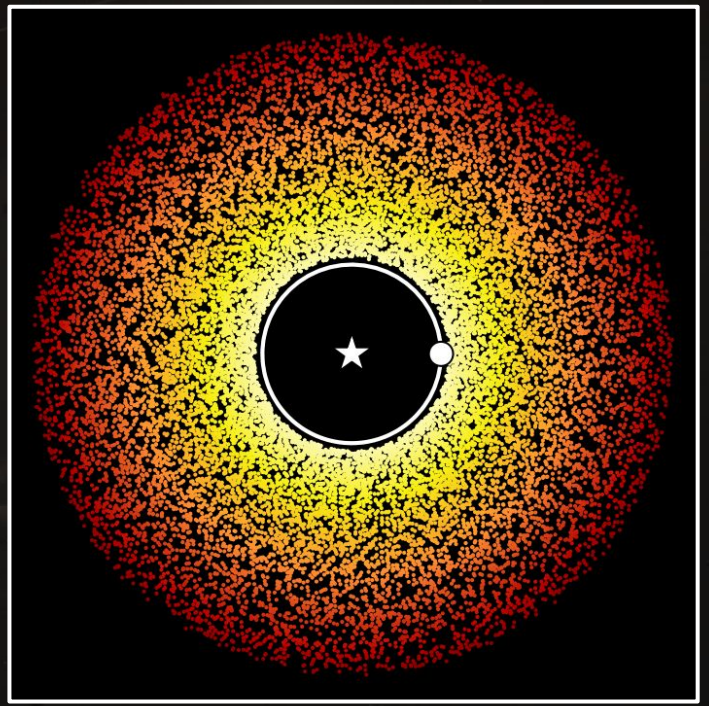
Calibrate models

Protoplanetary disc



Rowther et al. (2024)

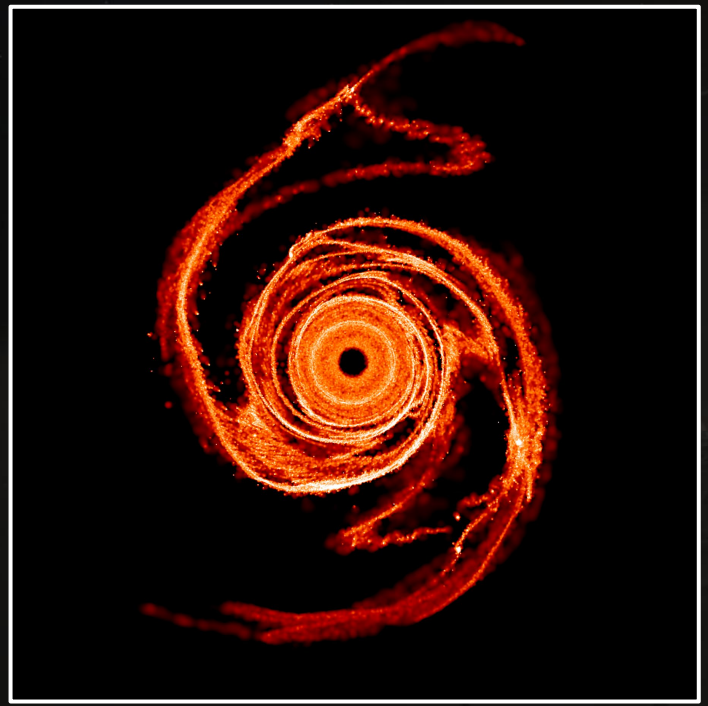
Debris disc



One of Tim's simulations 😬

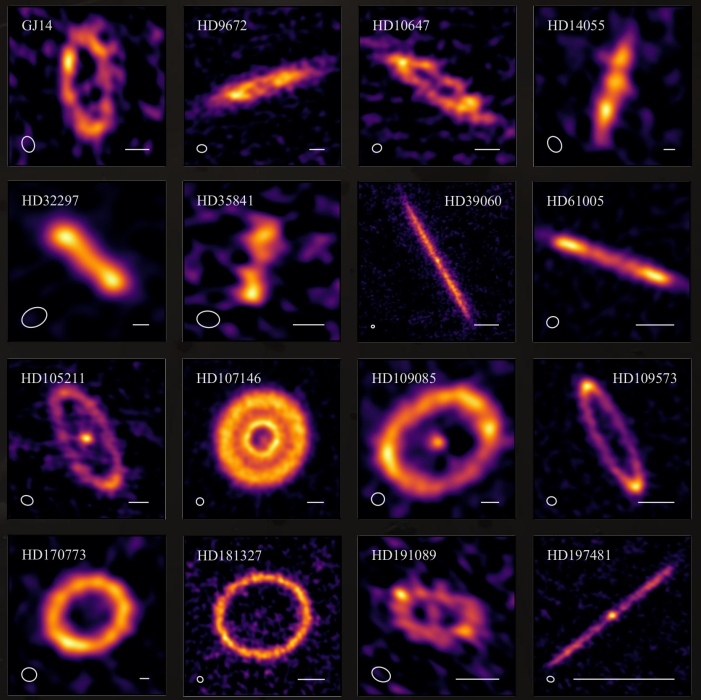
Calibrate models

Protoplanetary disc



Rowther et al. (2024)

Debris disc



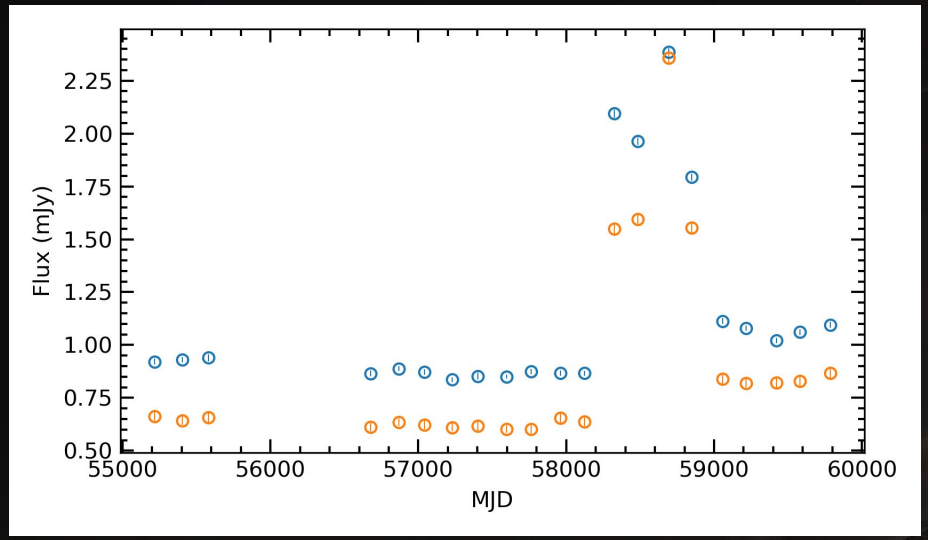
Matrá et al. (submitted)

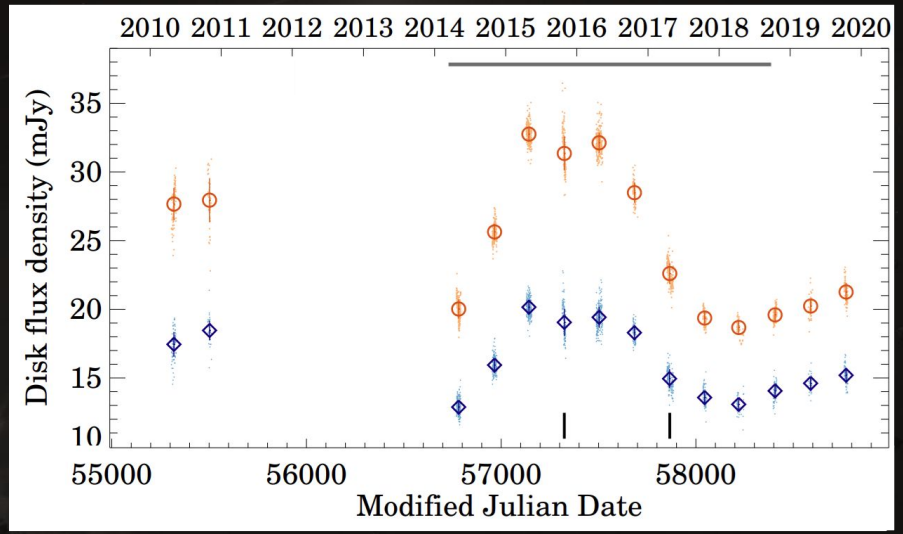
Extreme debris discs

Extreme debris discs

NASA/JPL-Caltech

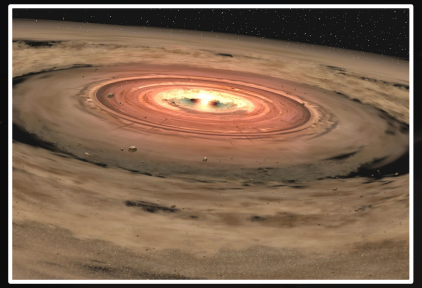
Extreme debris discs ≈ white-dwarf discs



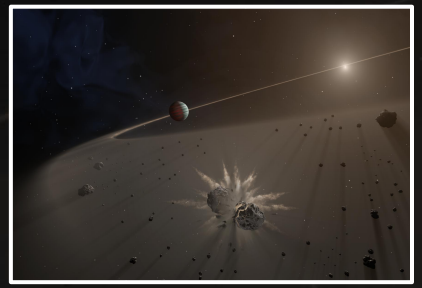


Adapted from Moór et al. (2021), additional data from IRSA

Protoplanetary → Debris → White dwarf



NASA/JPL-Caltech

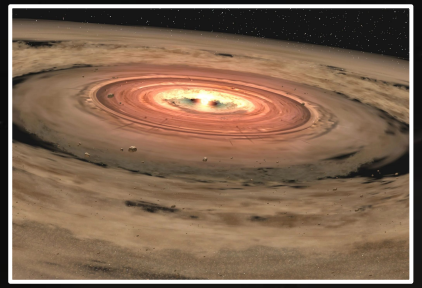


NASA/JPL-Caltech

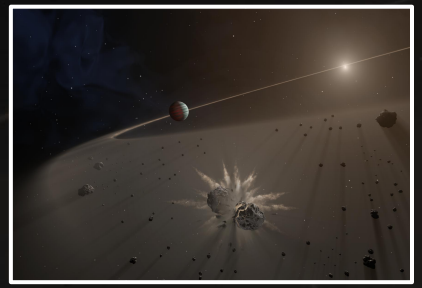
NASA, ESA, J. Olmsted (STScI)

What can we learn by combining our knowledge?

Protoplanetary → Debris → White dwarf



NASA/JPL-Caltech



NASA/JPL-Caltech

NASA, ESA, J. Olmsted (STScI)

What can we learn by combining our knowledge?

Anonymous questions

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#1817 936

Discussion ideas

1. What can each disk phase (PPD, DD, WD) tell us about the others?
    a. Changes in architecture (planet migration)
    b. Compositions
    c. Initial conditions
    d. Masses

2. Does gas have the same origin in DDs and WDDs?

3. What is the way forward observationally? And theoretically?

4. What other overlaps are there?