

HERSCHEL PROBING OF THE CIRCUMSTELLAR - INTERSTELLAR INTERFACE

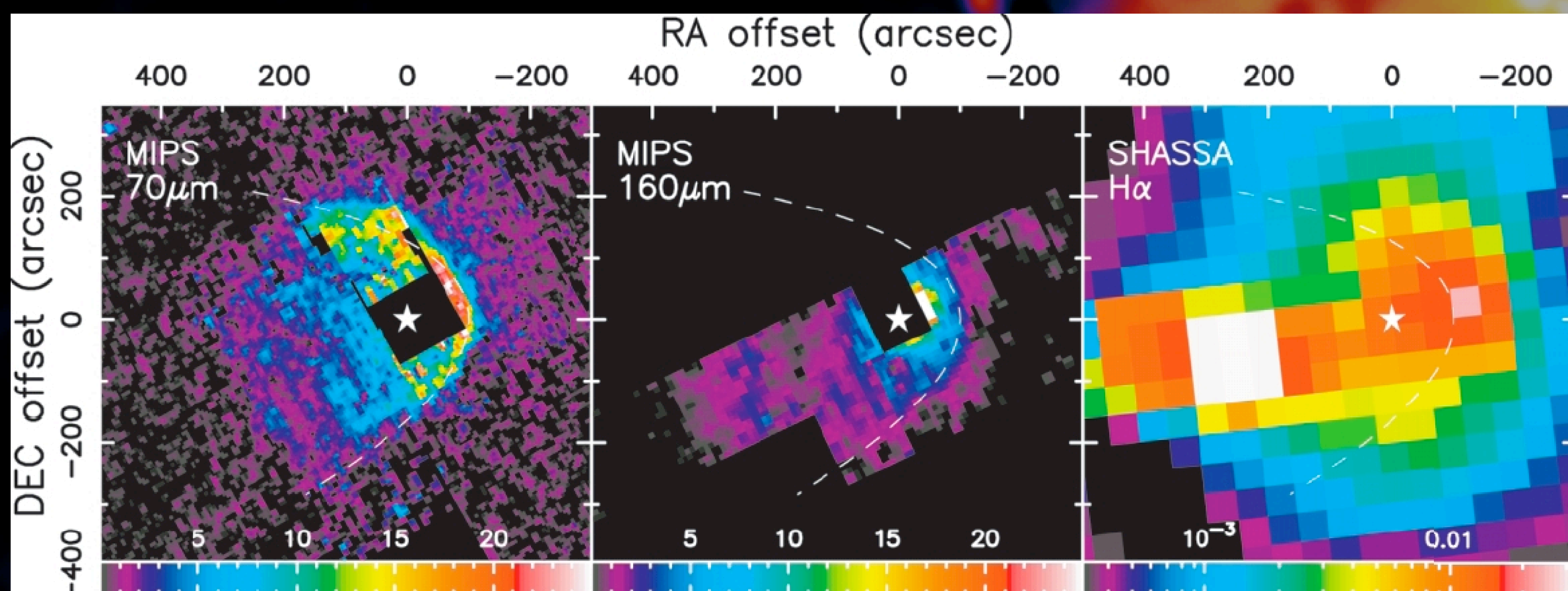


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DISCOVERIES OF FAR-IR BOW-SHOCK EMISSION AT THE STELLAR WIND - ISM INTERFACE

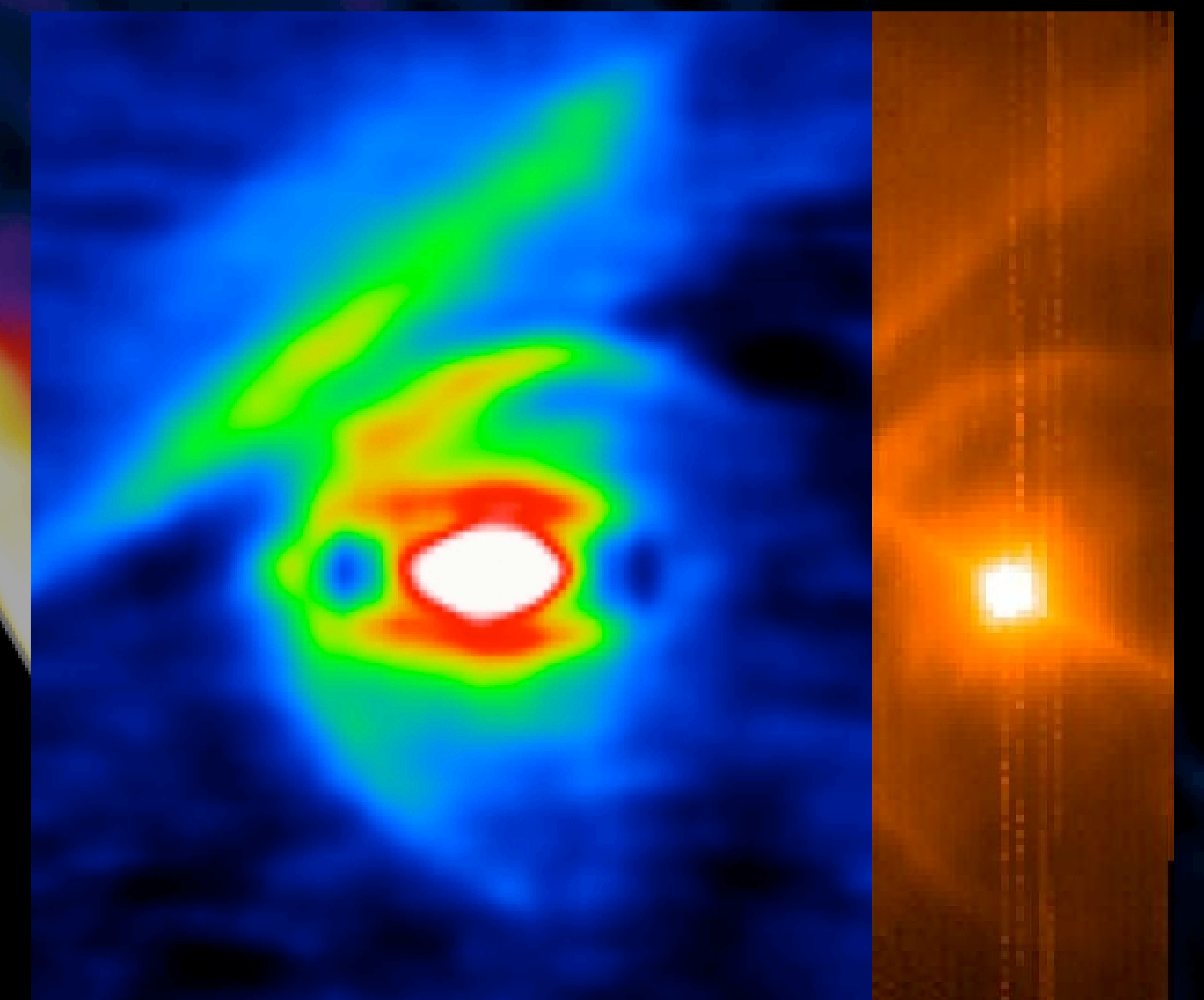
SPITZER-MIRIAD DISCOVERY AROUND AN
ASYMPTOTIC GIANT BRANCH STAR, R HYA



UETA ET AL. (2006, APJ, 648, L39)

FAR-IR BOW SHOCK EMISSION IS ALSO DETECTED
FROM MASSIVE RUNAWAY O AND B STARS
(FRANCE ET AL. 2007, APJ, 655, 920)

IRAS HIRES & AKARI SCAN MAPS
OF A RED SUPER GIANT, α ORI
(BETELGEUSE)



[LEFT] IRAS HIRES 60 μ m MAP
(NORIEGA-CRESPO ET AL.
1997, AJ, 114, 837)

[RIGHT] AKARI WS/90 μ m MAP
(UETA ET AL. 2007, IN PREPARATION)

HOW DO STELLAR EJECTA/CSEs REALLY DISSIPATE INTO THE ISM?

WE NAIVELY BELIEVE THAT STELLAR EJECTA IN THE CIRCUMSTELLAR ENVELOPES DISSIPATE INTO THE ISM,
AND THE PROCESSING OF SUCH MATTER IS DONE IN THE ISM. BUT, IS IT REALLY TRUE?

THE STELLAR WIND - ISM BOW SHOCK SURFACES HAVE BEEN FOUND NOT ONLY AROUND RSGs
OF HIGH MASS-LOSS RATES, BUT ALSO AROUND AGB STARS OF LOWER MASS-LOSS RATES.

AT THIS JUNCTURE, IT IS NOT CLEAR IF SUCH SHOCKS ARE COMMON AROUND MASS LOSING STARS, NEVERTHELESS,
THIS PHENOMENON HAS BEEN SEEN AROUND MANY TYPES OF STARS. IF IT IS SIGNIFICANT, THE CSE DUST GRAINS/
MOLECULES ARE LARGELY DESTROYED WHEN THEY DISSIPATE INTO THE ISM,
IMPACTING THE NATURE OF THE ISM AT LARGE.

SUITE OF HERSCHEL INSTRUMENTS ALLOWS DETAILED PROBING OF SPATIALLY RESOLVED SHOCK PHYSICS
IN THIS UNCHARTED TERRITORY FOR THE FIRST TIME, AUGMENTING EXISTING CIRCUMSTELLAR/ISM GTs.