George Howard Herbig (1920-2013)
- A Life for Astronomy -

- **Revised Values of the Linear Diameter of Seven Bright Stars:**
  1940, PASP, 52, 327 (3 pages, Mt Wilson)
- **The Outflowing Wind of V1057 Cygni:**
  2009, AJ 138, 448 (4 pages, Keck)

Going West ….

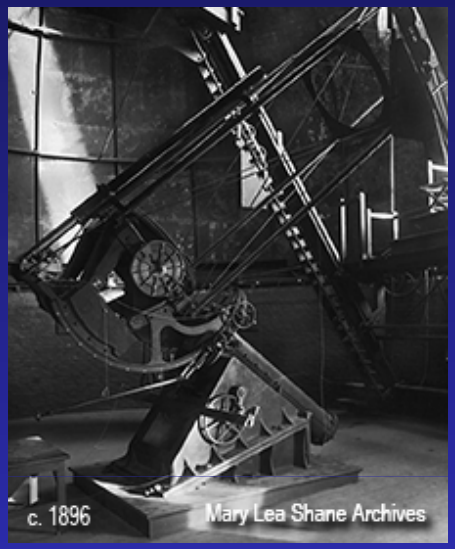
From Wheeling (West Virginia) to L.A.

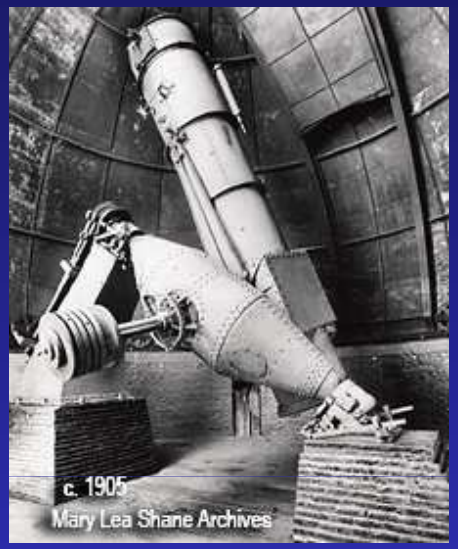
Griffith Obseratory

CCC: Constructing – Contacting – Counseling

- Finished his studies at UCLA in 1943 – Lick Observatory
- PhD thesis at UCB in 1948 „A study of variable stars in nebulosity“

The Crossley Telescope (1896-2010)





George Herbig →

Steven Vogt →

Geoff Marcy

Double check the measurements -
Close to data – Physical interpretation

The Debate – Theory vs. Observations

Saas Fee Course 29 – George Herbig (2002)

Hoyle & Littleton: Old stars accrete H (rejuvenation)
Ambartsumian: Disintergration of unstable super-massive objects

Observational Breakthrough: Alfred Joy – T Tauri Variable (1942, 1945)

Harvard Centennial Symposium (1948)

Whipple & Bok & Spitzer: Collapse due to galactic radiation field
[Spitzer never mentioned the importance of T Tauri stars]

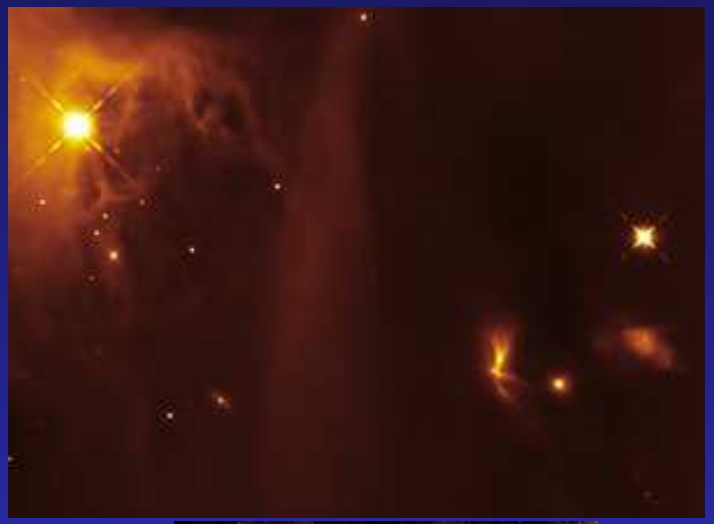
1947-1954: Ambartsumian: TTS – Low-mass stars in the process of contraction
(ignored, with the exception of Struve)

1953: A. Blaauw (expanding OB associations), 1954 (G.H.): TTS in IC 348

1954-1955: E. Salpeter - Young stars in HRD (No reference to TTS)

1955: G.H. - TTS as a class are new objects (M.F. Walker (1956) – NGC 2264)

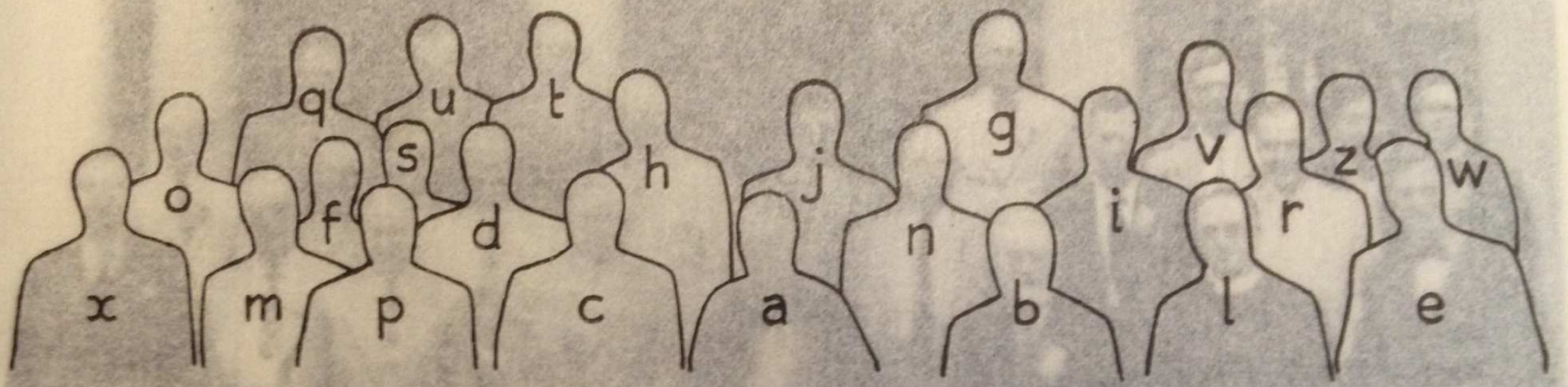
IC 348 & NGC 2264



HST Image of IC 348

Spitzer Image of NGC 2264

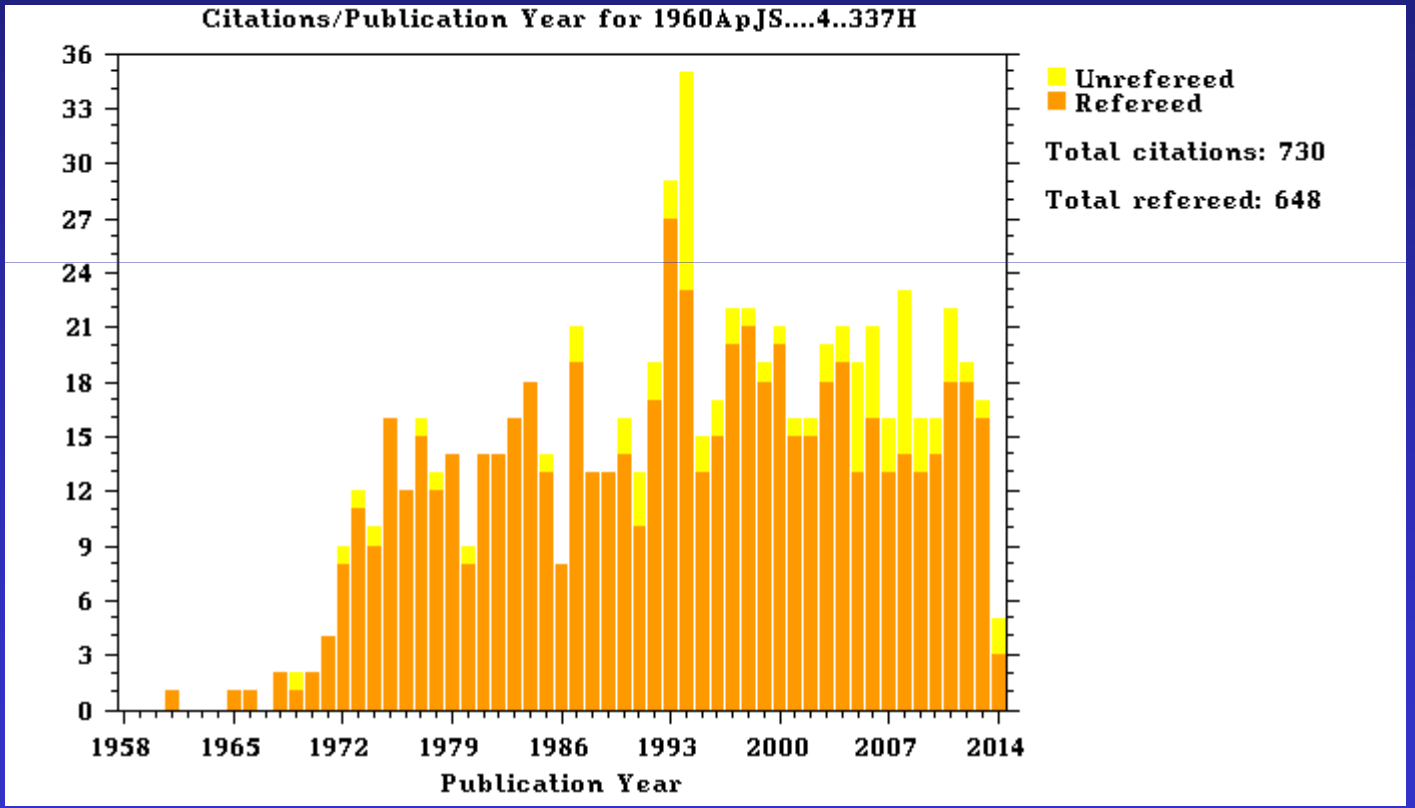
Vatican Conference – Stellar Populations (1957)



a) Rév. Père D. O'Connell S. I., Président de la Semaine d'Etude - Città del Vaticano.
b) S. E. Prof. Dr. G. Armellini. - Roma.
c) Dr. W. Baade. - Pasadena, Calif.
d) Dr. A. Blaauw. - Williams Bay, Wis.
e) S. E. Prof. H. A. Brück. - Dublin.
f) Dr. D. Chalonge. - Paris.
g) Dr. W. A. Fowler. - Pasadena, Calif.
h) Prof. Dr. O. Heckmann. - Hamburg.
i) Dr. G. H. Herbig. - Mt. Hamilton, Calif.
j) Mr. F. Hoyle. - Cambridge.
l) S. E. Prof. Dr. G. Lemaitre. - Louvain.
m) Prof. Dr. B. Lindblad. - Saltsjobaden.
n) Dr. W. W. Morgan. - Williams Bay, Wis.
o) Prof. Dr. J. J. Nassau. - East Cleveland, Ohio.
p) Prof. Dr. J. H. Oort. - Leiden.
q) Dr. E. E. Salpeter. - Ithaca, N. Y.
r) Dr. A. R. Sandage. - Pasadena, Calif.
s) Prof. Dr. M. Schwarzschild. - Princeton, N. J.
t) Prof. Dr. L. Spitzer. - Princeton, N. J.
u) Prof. Dr. B. Strömgren. - Williams Bay, Wis.
v) Dr. A. D. Thackeray. - Pretoria.
w) Rév. Père P. Treanor S. I., Secrétaire scientifique de la Semaine d'Étude.
x) Dr. P. Salviucci, Chancelier de l'Académie Pontificale des Sciences.
z) Mme V. Préobrajenski, Chef du secrétariat.

A Famous Paper …

The spectra of Be- and Ae-type stars asscoiated with nebulosity
ApJS 4, 437, 1960 (AB Aur, T Ori, RR Tau, Z CMa, R Mon, …)



The properties and problems of T Tauri Stars and Related Objects.
Adv. Astron. Astrophys. 8, 109. 1962.

Herbig Ae/Be stars (2013) ….

520 refereed papers with 'Herbig Ae Be stars' in the title.

Here are some examples from the past year alone:

* The Herbig Ae SB2 system HD 104237

* Comparison between accretion-related properties of Herbig Ae/Be and T Tauri stars

* Star-disk interaction in Herbig Ae/Be stars

* Observations of Herbig Ae/Be stars with Herschel/PACS. The atomic and molecular contents of their protoplanetary discs

* Chemical abundances of magnetic and non-magnetic Herbig Ae/Be stars

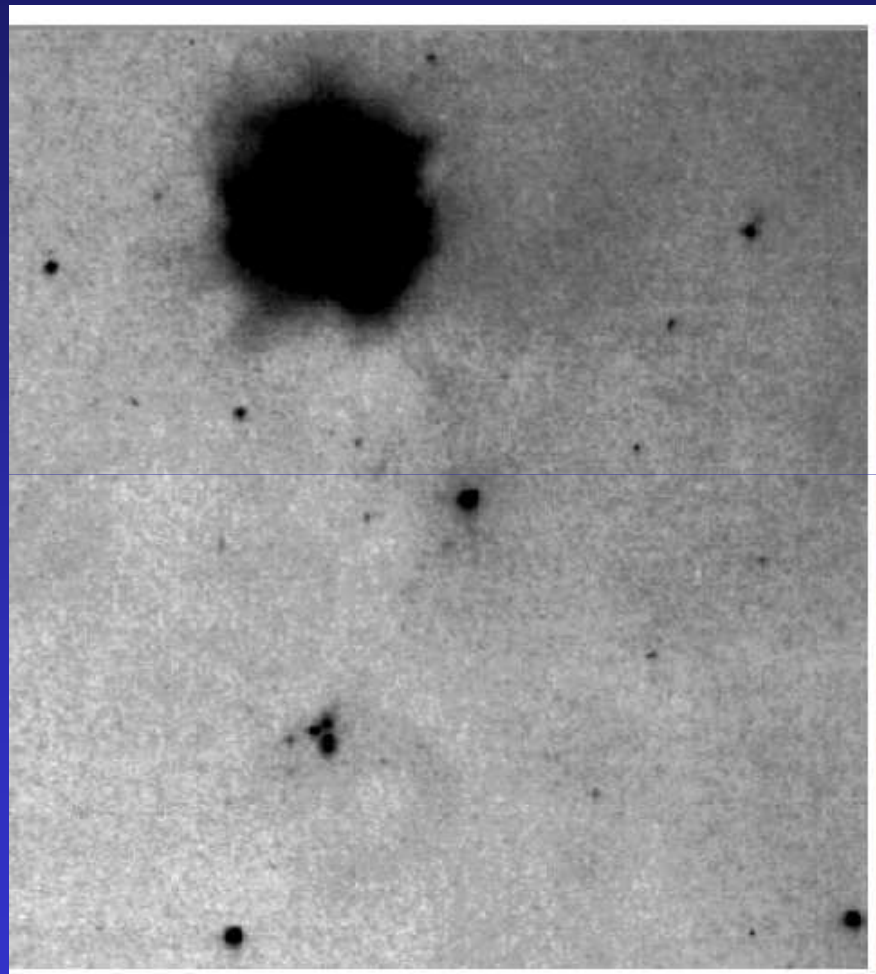
* Application of the Baade-Wesselink method to a pulsating cluster Herbig Ae star: H254 in IC348

* Evidence of a discontinuous disk structure around the Herbig Ae star HD 139614

* Petrologic Constraints on Amorphous and Crystalline Magnesium Silicates: Dust formation and evolution in selected Herbig Ae/Be systems

* The evolution of the jet from Herbig Ae star HD 163296 from 1999 to 2011

The Herbig-Haro Objects …



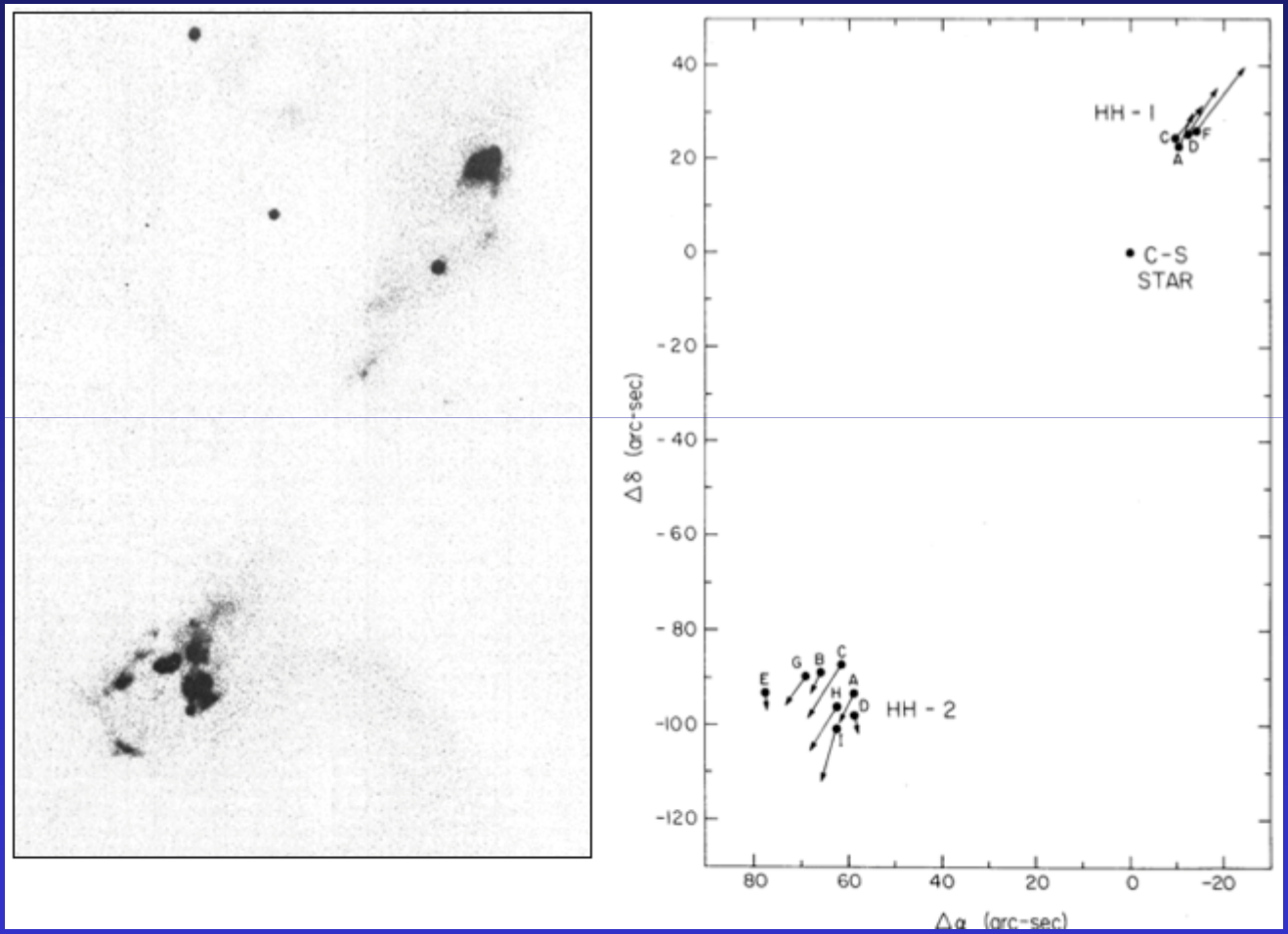
Crossley Reflector 1947

36 inch + photographic plate

Subaru+HST 2010

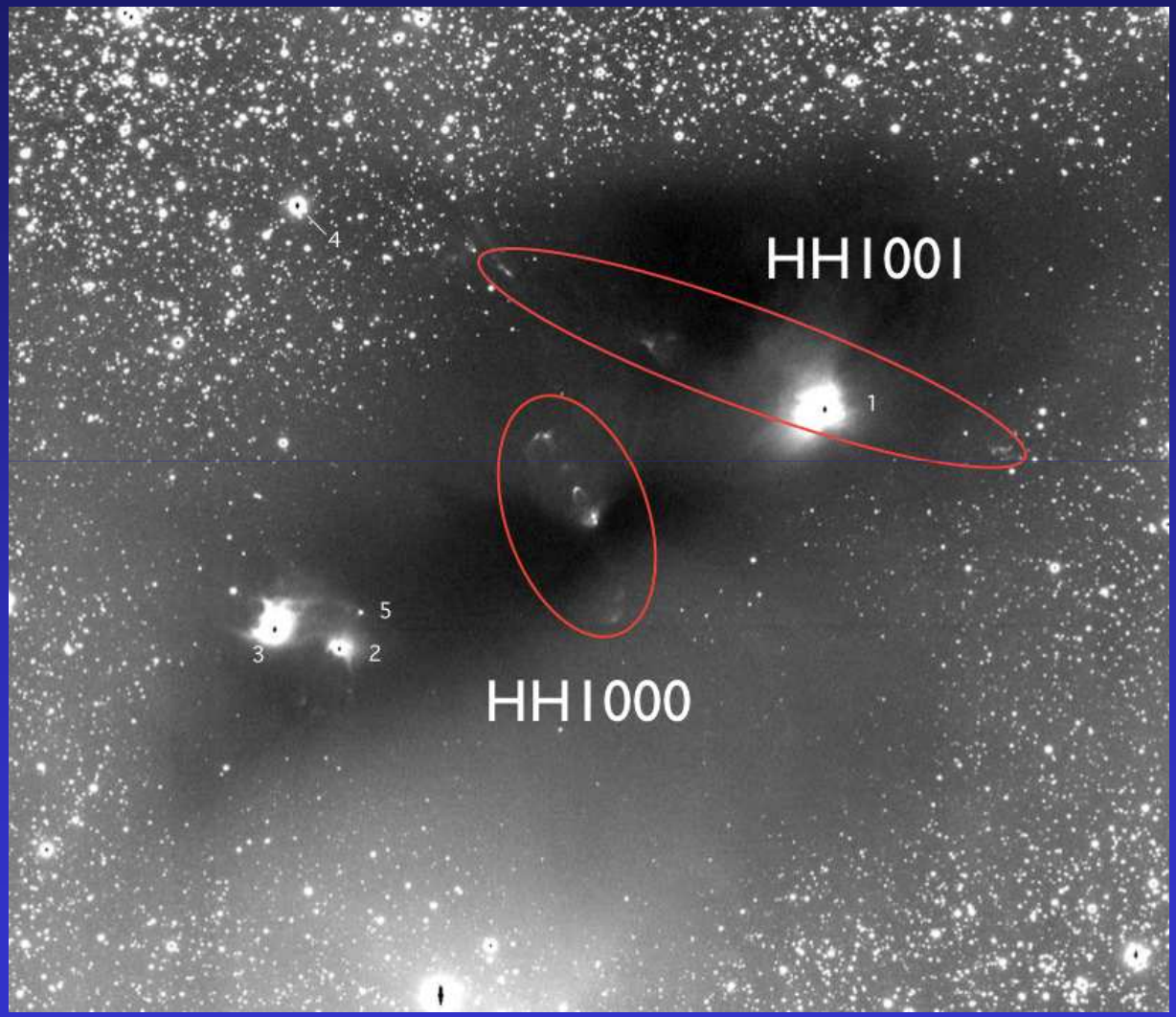
315 inch + CCD

The Herbig-Haro Objects …



Herbig, G.H., Jones, B.F.: 1981, AJ 86, 1232.
1946-1980 photographic plates

HH 1000 …

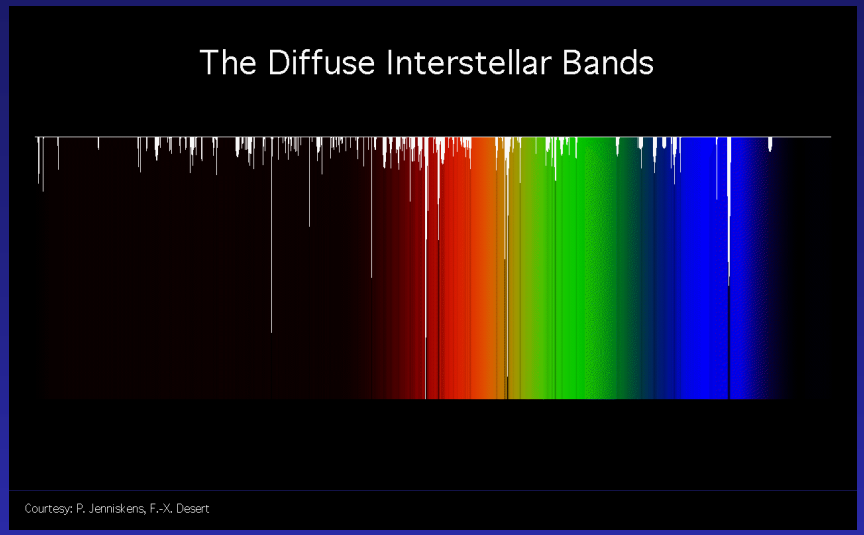


Chiang, Reipurth (2014): Bok Globule in Ophiuchus

The Story Continues …

Wang & Henning (2009): Lupus I/III – HH 981-991 (HR 5999)
Zhang, Wang & Henning (2014): Vela C – HH 1090-1107

Other Topics …



1963- ….
The Diffuse Interstellar Bands
ARAA 33, 19, 1995

C_{60} Search: ApJ 542, 334, 2000

- **Work on stellar clusters (NGC 2264, IC 1274, IC 348, …)**
- **Work on eruptive young stars (FU Ori, EX Lupi, …)**

Eruptive phenomena in early stellar evolution. 1977, ApJ 217, 693.

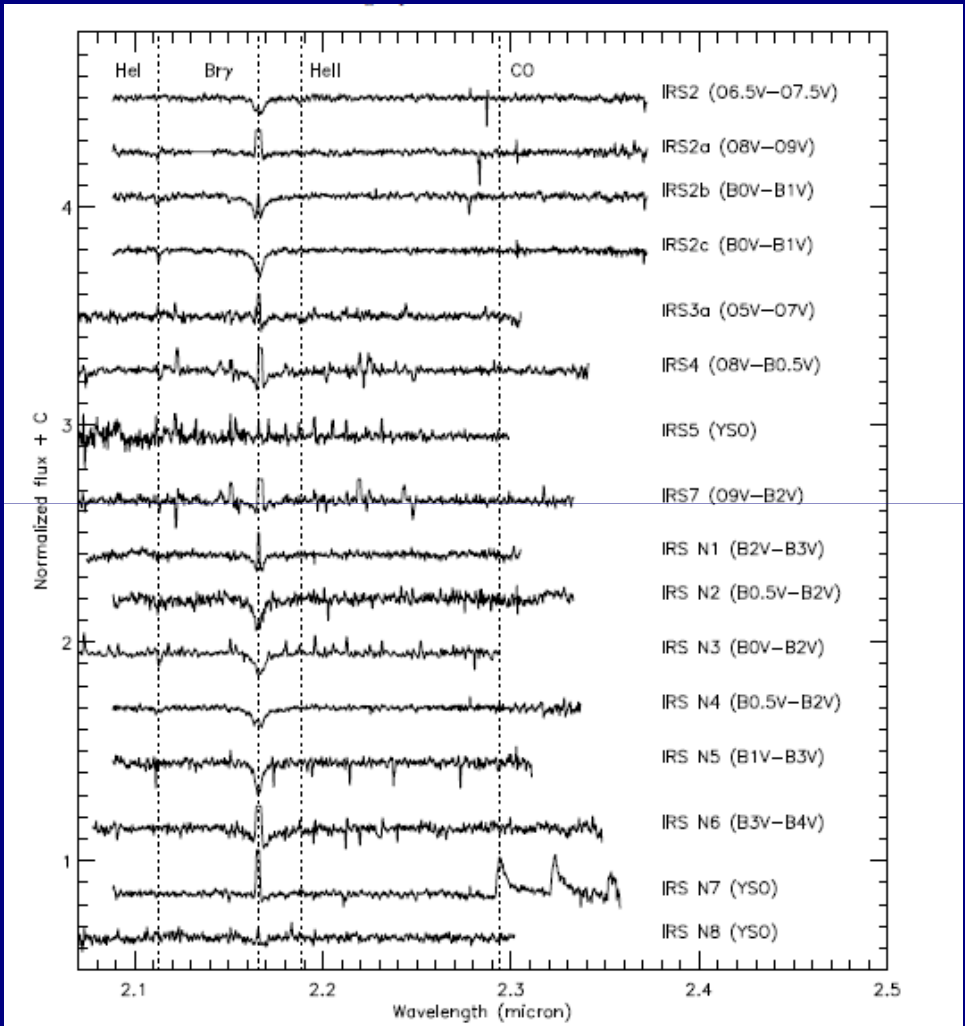
On the interpretation of FU Orionis. 1966. Vistas in Astr. 8, 109.

Discovery of V 900 Mon in 2012 with Bo Reipurth

LBT/LUCIFER – LOBSTAR

W 3 in J, H and Ks

LBT/LUCIFER – Spectroscopy

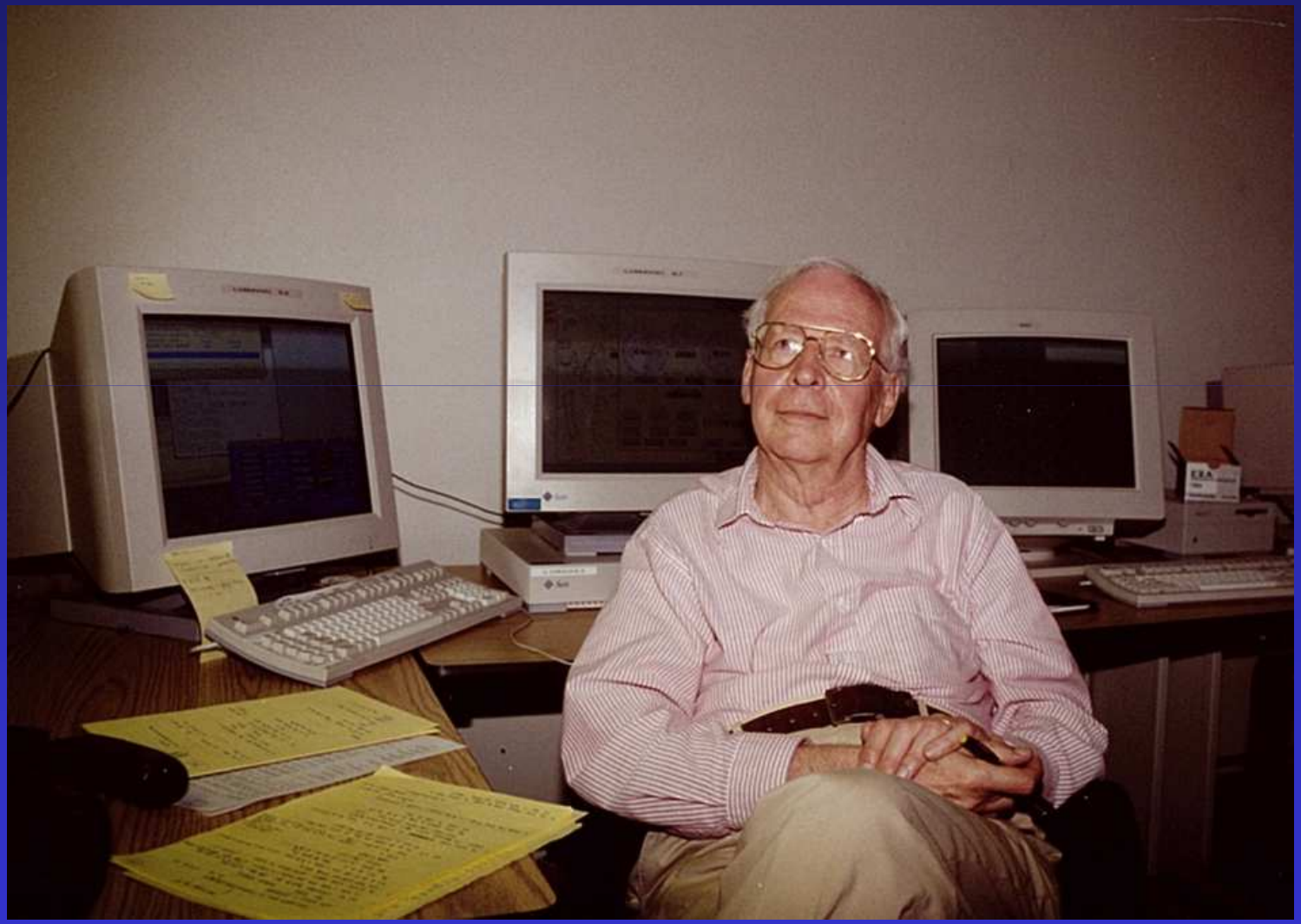


- Photosphere of OB stars discovered (material cleared away)
- Exception W3-IRS 5
- Age spread of 2-3 Myrs

Bik et al. (2012, ApJ, 744, 87)

Instantaneous star formation in Westerlund 1 & NGC 3603 (Kudryatseva et al. 2012, ApJL 750, L44)

After retirement (1987) … Have a good plan!



A few observations …

- Many single-author papers (5 authors at the maximum), 2/3 of his papers were single-author papers

  (compare: Dent et al. GASPS, 2013, PASP, 125, 477, 54 authors)

- Maximum number of papers – 2/year. An *author* is broadly defined as "the person who originated or gave existence to anything" (wikipedia)

- From 2m-class telescopes to 8m-class telescopes

- From photographic plates to CCDs

- Mexico: HH = Haro-Herbig Objects

- „Herr Haebe“ wrote a letter to George Herbig …

- „It is either obvious or irrelevant ….“