

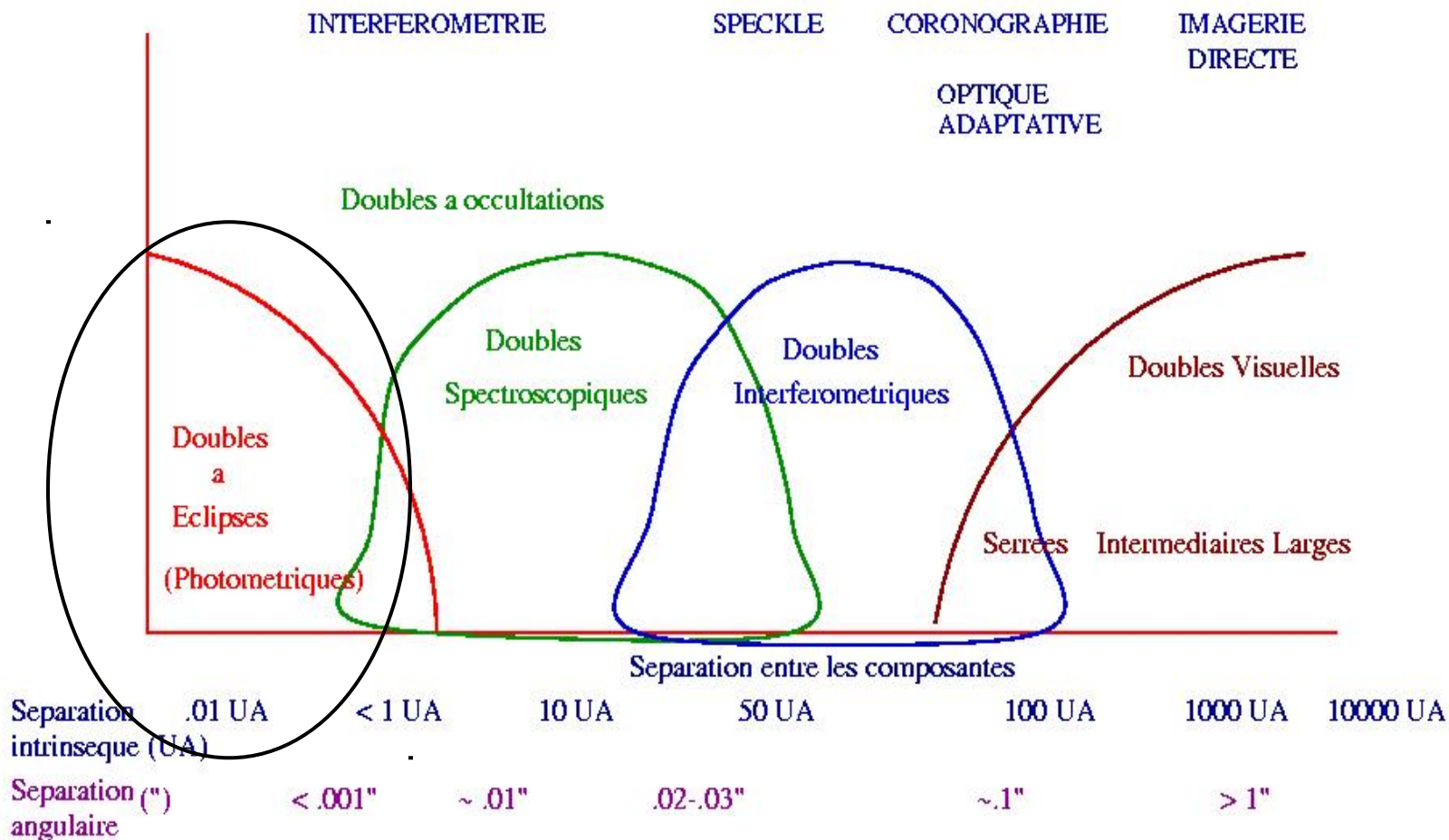
# *Collaborations pro-am en photométrie sur les étoiles de types binaires à éclipses*

Laurent Corp



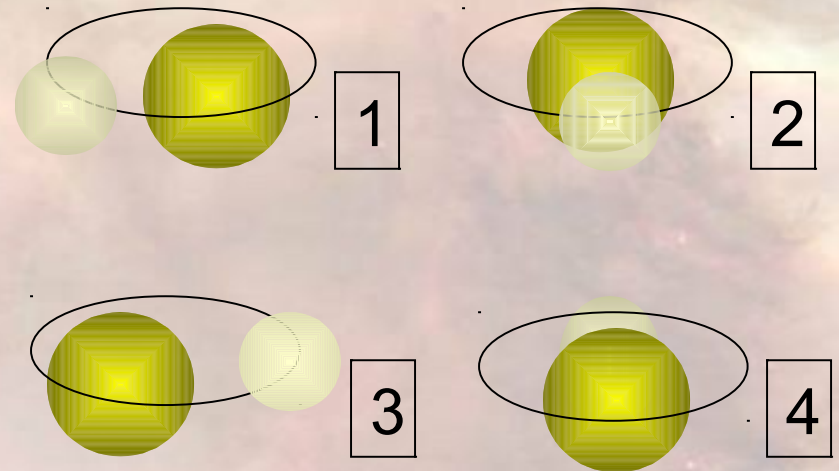
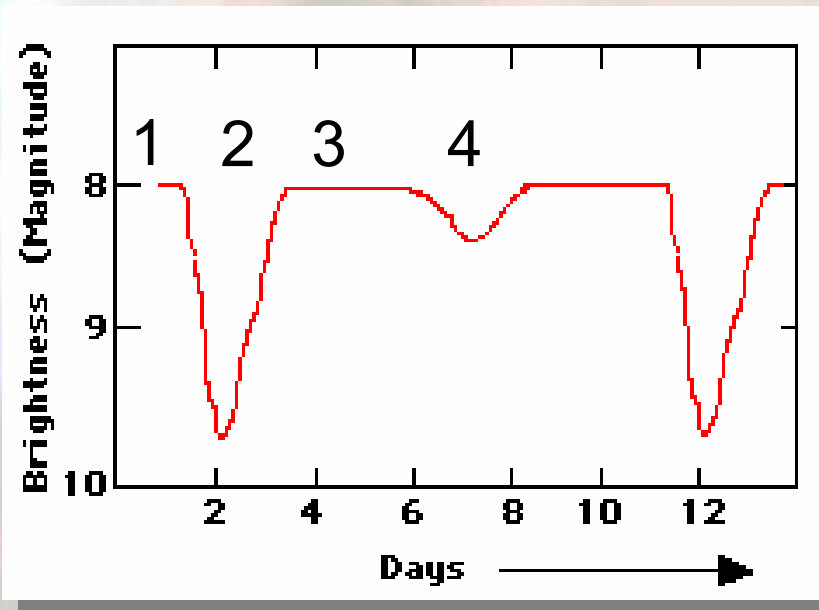
# LES CATEGORIES D'ETOILES DOUBLES ET MULTIPLES

(dependent des techniques d'observation)



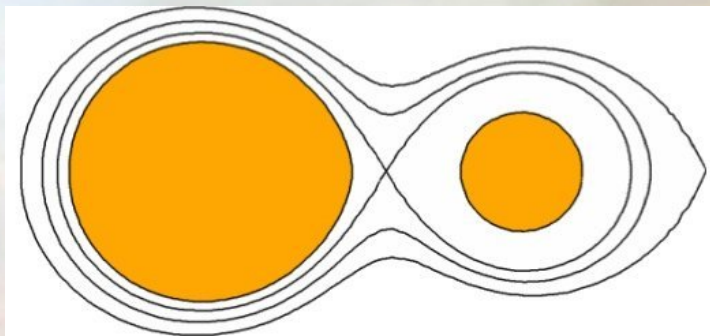
# Les Binaires à Eclipses

★ Les différentes phases

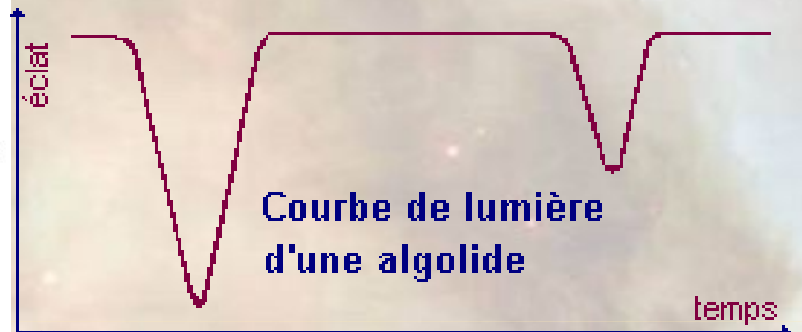


# Caractéristiques Physiques

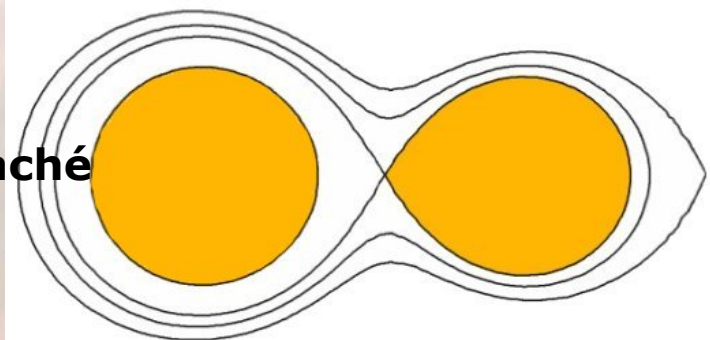
EA (Algolides)  
**D - Détaché**



A detached system has both stars smaller than their Roche lobes.



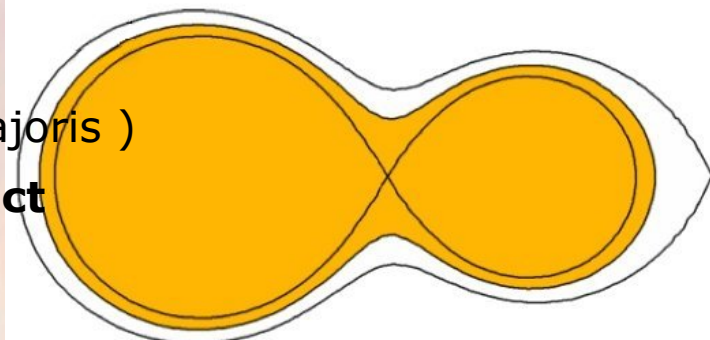
EB Béta Lyr  
**SD - Semi-détaché**



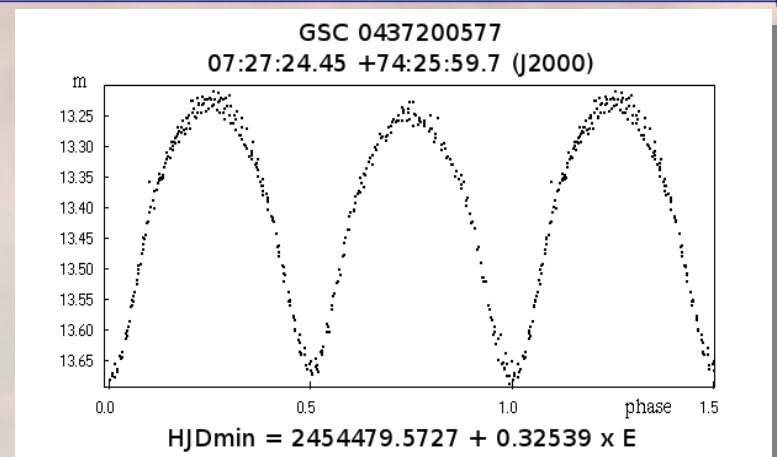
In a semidetached system, one star fills its Roche lobe while the other is smaller than the Roche lobe.

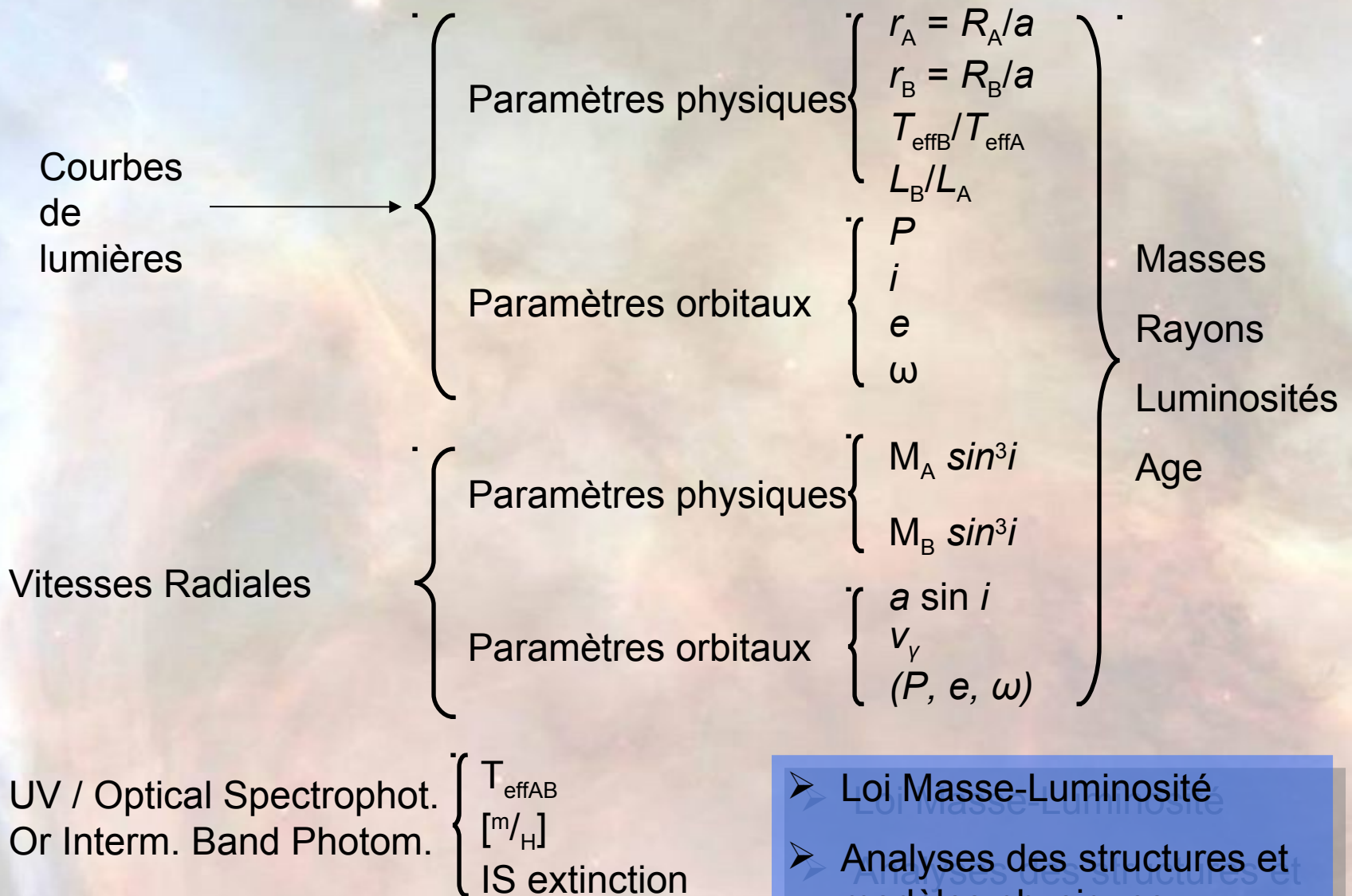


EW (W Ursae Majoris )  
**C - Over-Contact**



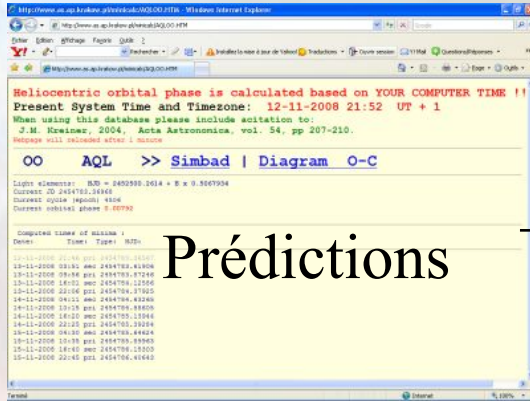
In overcontact systems both stars are contained within a common envelope of material.



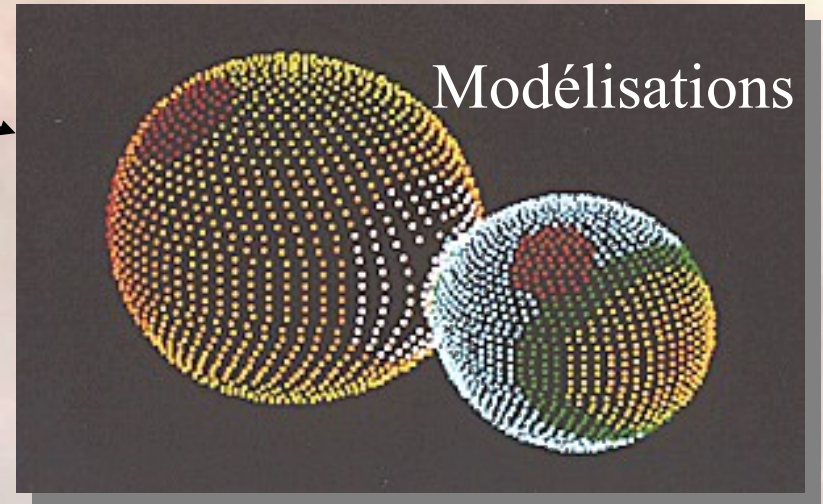
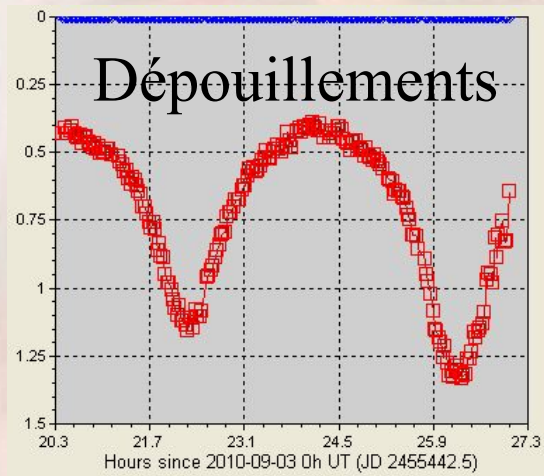


- Loi Masse-Luminosité
- Analyses des structures et modèles physiques
- Détermination des distances
- ...

# Les axes de recherches 1/5



Prédictions



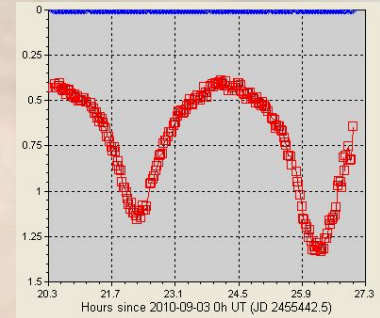
Envoie des données :

- AAVSO
- Oleg Malkow (Institute of Astronomy, Russian Academy of Sciences, Moscow, Russia - Lomonosov Moscow State University, Faculty of Physics, Moscow, Russia )

# Les axes de recherches 2/5

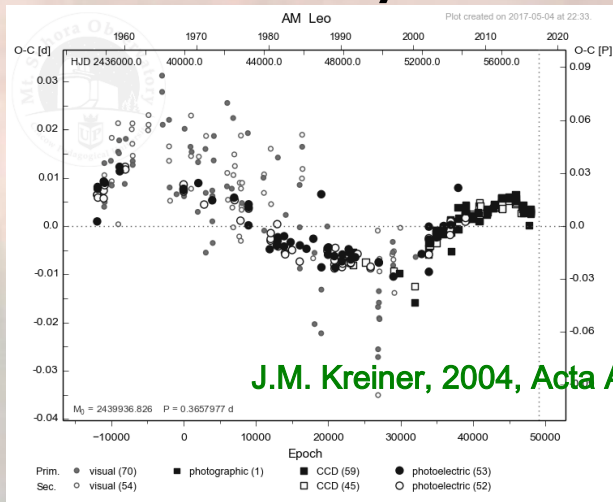
## ★ Obtenir une courbe de lumière COMPLETE

- Multi-filtres
- Sinon avec un filtre V-r'

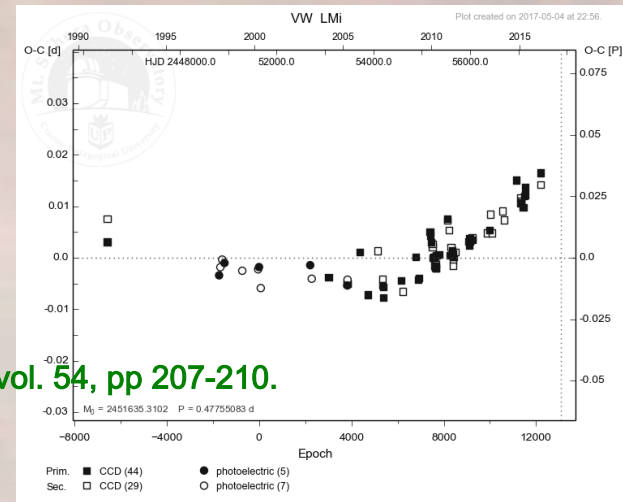


## ★ Mise en évidence O-C (observé moins calculé)

- Analyse de la courbe résultante

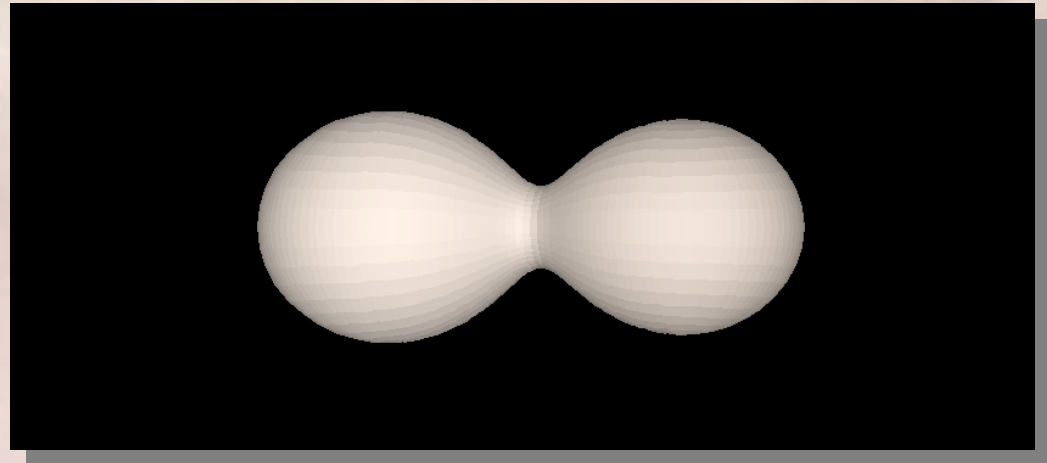
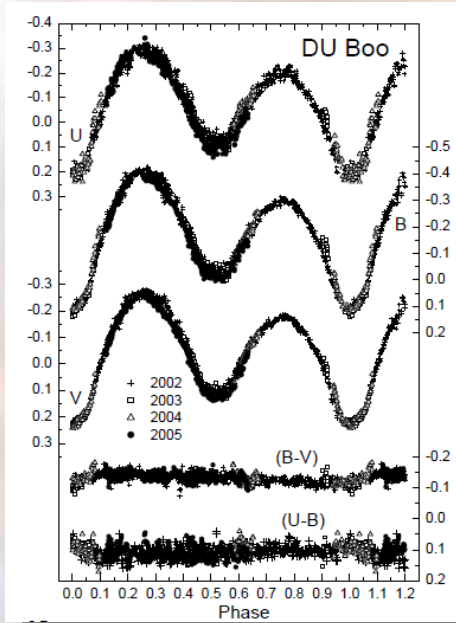


J.M. Kreiner, 2004, Acta Astronomica, vol. 54, pp 207-210.



# Les axes de recherches 3/5

- ★ Effet O'Connell pour les étoiles de type EW
  - Hauteur différentes des maxima
  - Points chauds, poussières...



Astron. Nachr. / AN **332**, No. 6, 607 – 615 (2011) / DOI 10.1002/asna.201111569

## O'Connell effect in early-type contact binaries

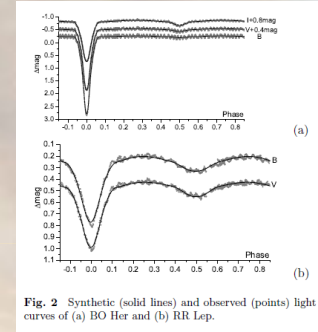
DU Boo and AG Vir T. Pribulla et al.



# Les axes de recherches 4/5

## ★ Variations sur le plateau pour les étoiles de type EA : **oEa stars**

- Micro-amplitude à détecter
  - de l'ordre du mmag.
- Pro : P. LAMENS – Observatoire Royal de Belgique



## ★ Changement du plan orbital de la seconde composante

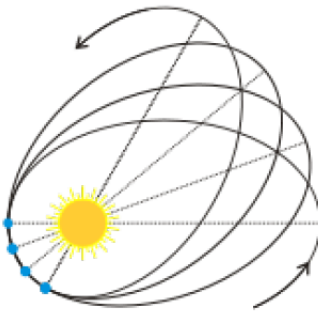
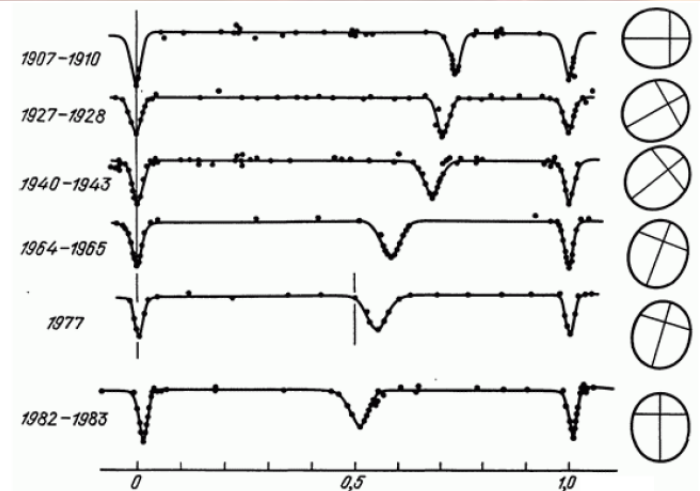
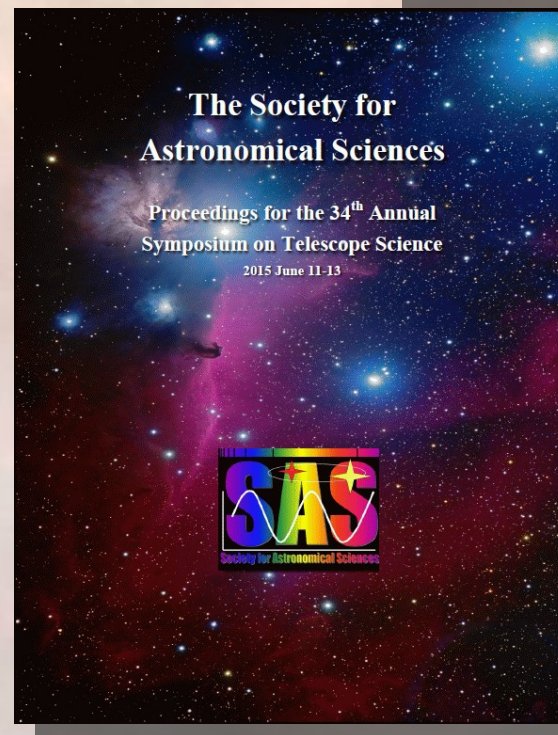
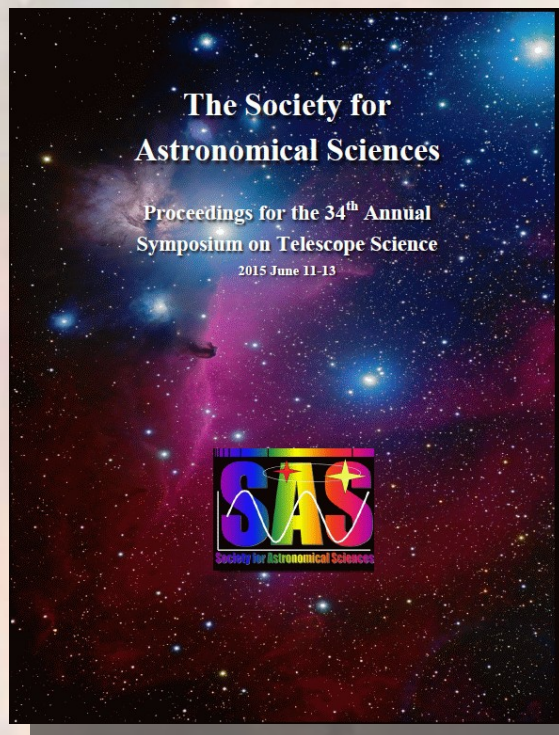
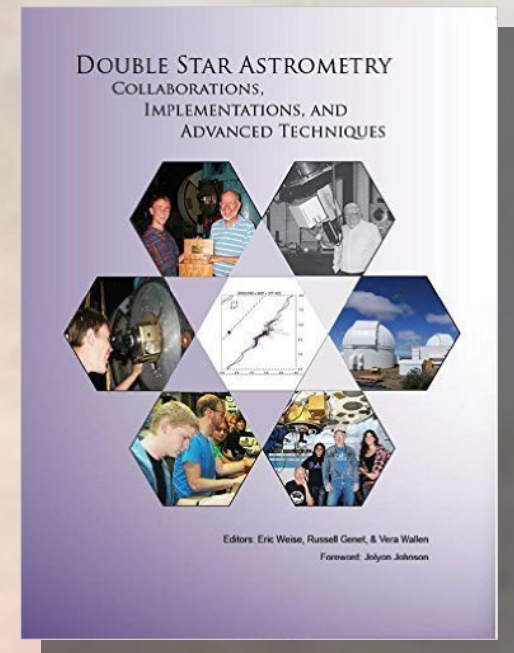
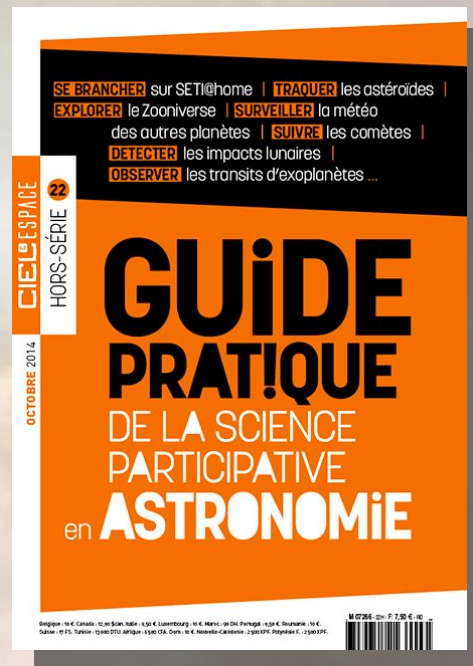
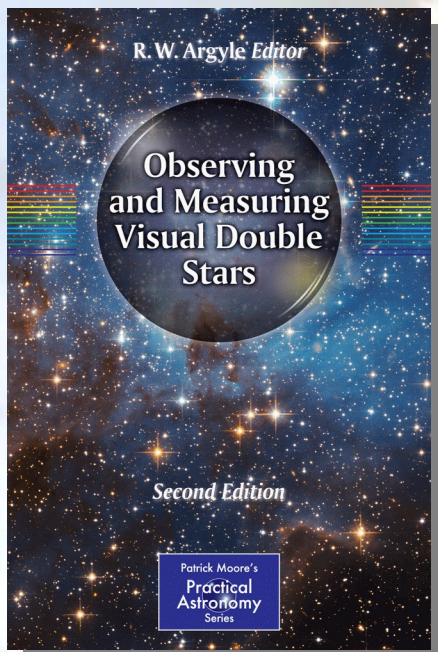


Fig.1. The light curve evolution of RU Mon between 1907 and 1983, due to the apsidal motion effect (right). Schematic model of the line of apsides rotation (top).



# Les axes de recherches 5/5

- ★ Binaires à éclipses perdues ou non ré-observés
  - Une soixante d'étoiles sans data depuis 2016.
  - Pertes de périodes – d'amplitudes .....
  - RV APS – 2 points (O-C) depuis 1928
    - **Présentation des résultats à RODEZ lors de la Commission des Etoiles Doubles de la SAF du vendredi 28 au dimanche 30 septembre 2018.**
    - <http://saf.etoilesdoubles.free.fr/CED%20Rodez-2018.pdf>



MERCI de votre  
attention



des questions ?