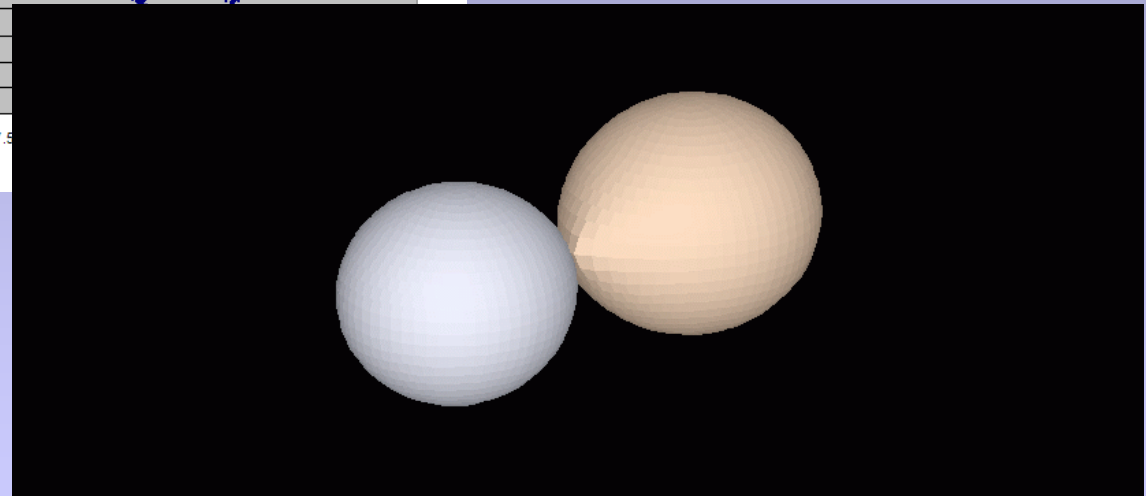
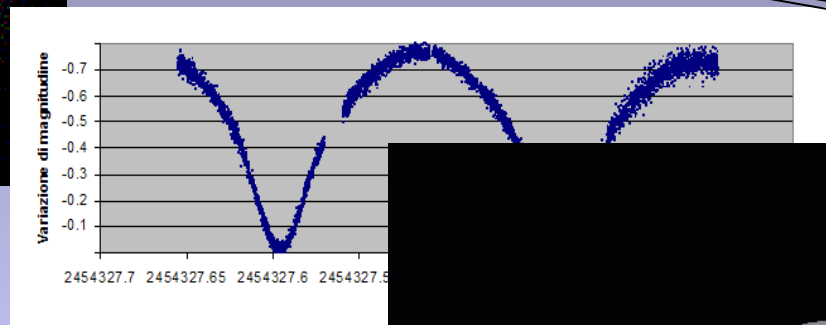
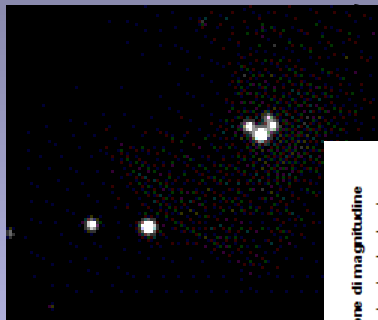


Modelling di binarie a eclisse



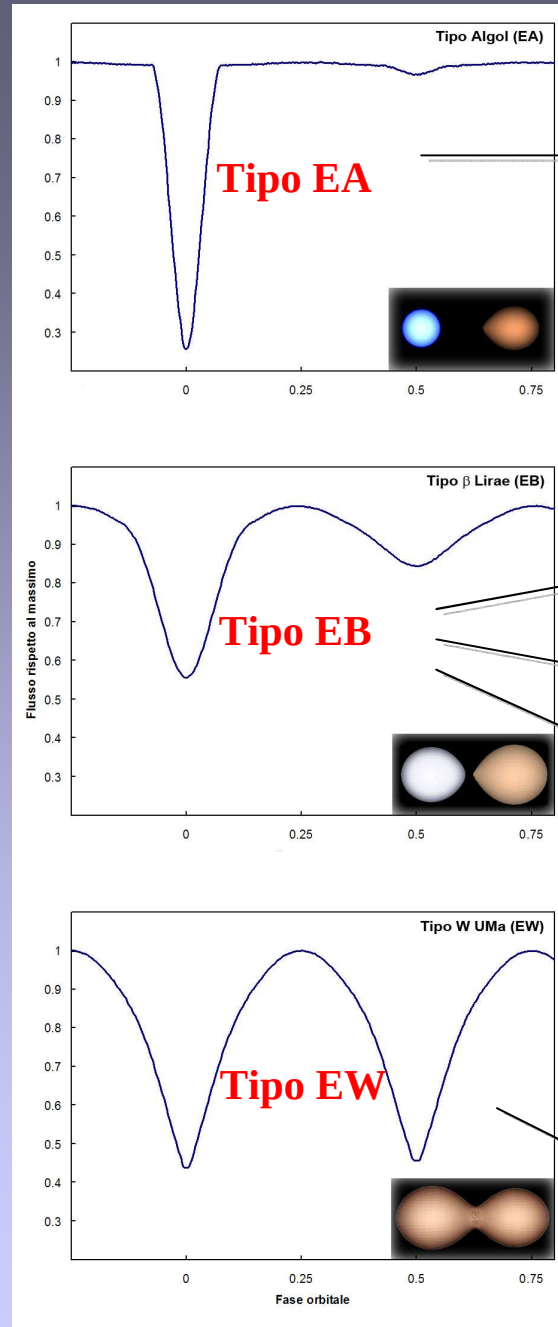
Giuseppe Marino

GRUPPO ASTROFILI CATANESI
SEZIONE STELLE VARIABILI – UAI - GRAV

*Dalla curva osservata al
modello della binaria*

1° passo:

*classificare l'oggetto in
base alla curva di luce*



Possono essere...

Sistemi distaccati

distaccati

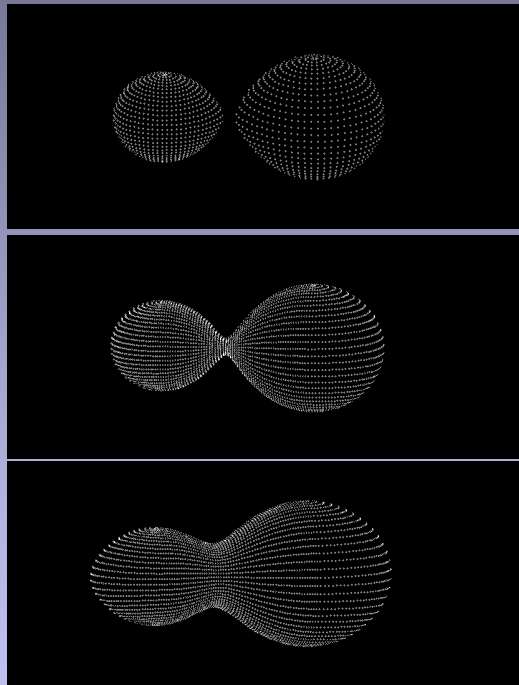
semidistaccati

over-contact

over-contact

2° passo:

*Comprendere
la struttura e i parametri*

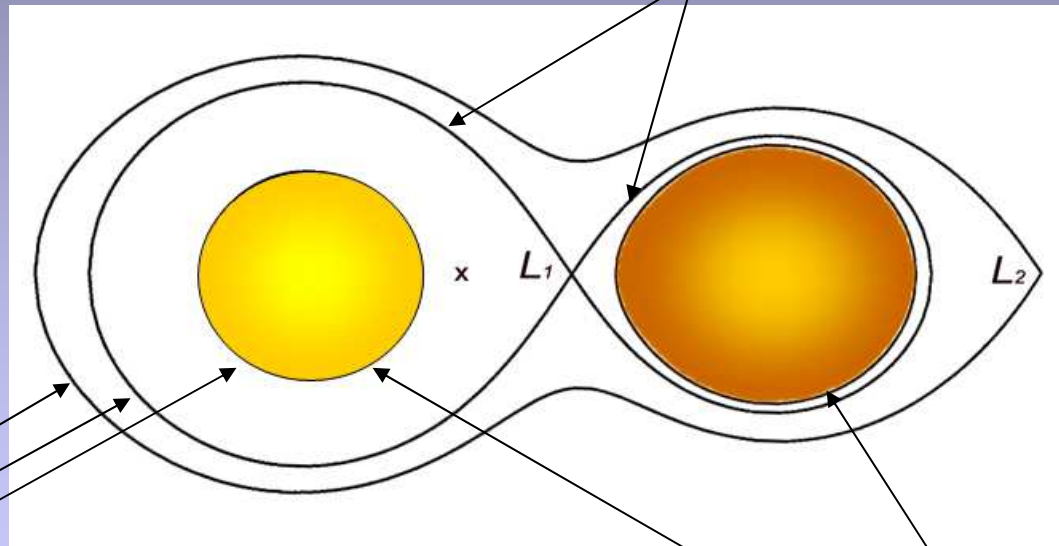


possibili
superfici stellari

Superfici equipotenziali

*esempio in cui una stella
ha massa metà dell'altra
($q = 0.5$)*

superficie critica: "Lobi di Roche"



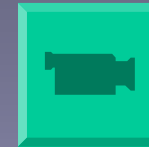
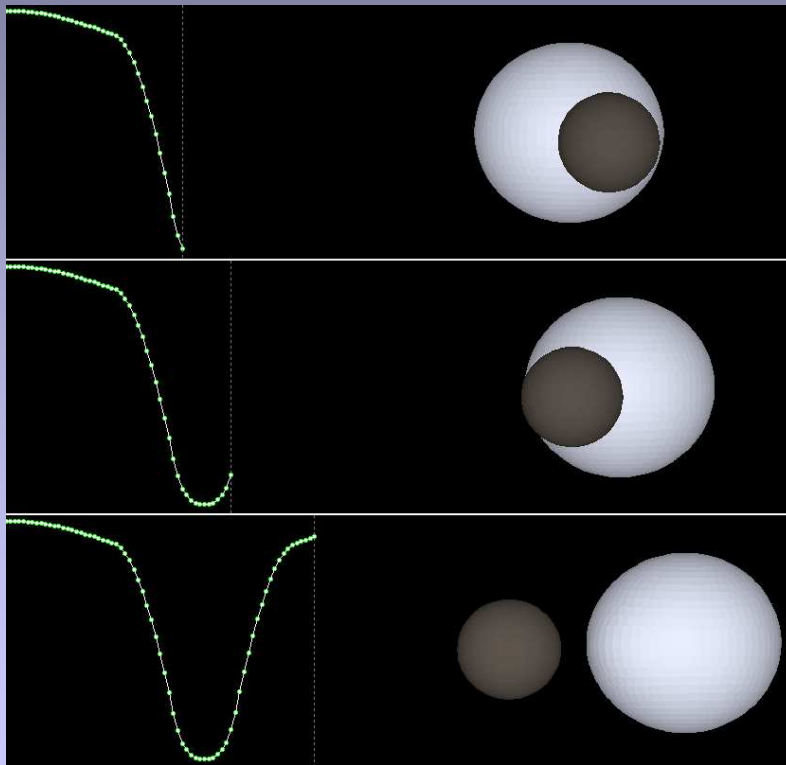
superfici stellari effettive per $\Omega_1 = 3$ e $\Omega_2 = 5$)

Ω : "POTENZIALE SUPERFICIALE"

individua la forma e la dimensione di ciascuna stella

3^o passo:

*Comprendere
che il problema non è banale...*



Binary v.3

programma DOS
di Danny Bruton (1993)
(caso di dischi circolari e
omogenei)

<http://dubhe.ursa.fi/extra/ohjelmarekisteri/index.php4?lang=en>
(andare nella sezione MS-DOS)

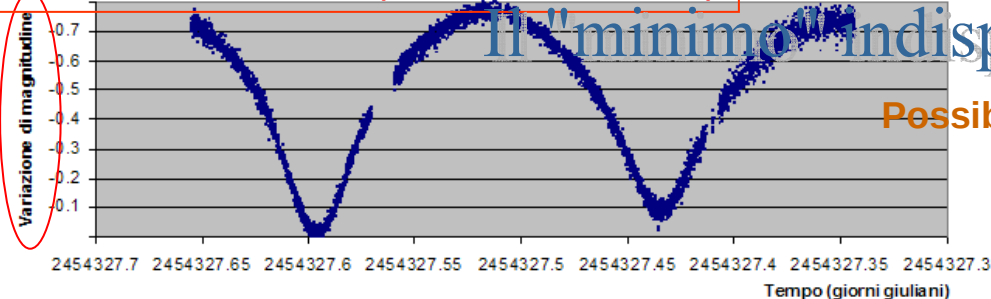


StarLight Pro

di Danny Bruton

<http://www.midnightkite.com/binstar.html>

Fotometria standard!! (filtri fotometrici + ...)



Il "minimo" indispensabile

Possibilmente in più bande!!

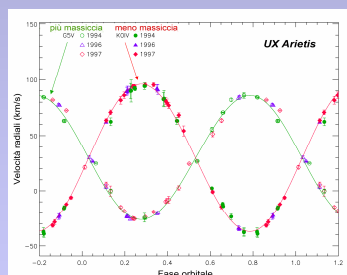
4^o passo:

Iniziamo il fit: parametri di partenza...

Letteratura

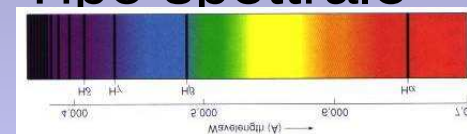


Velocità radiali



Indici di colore

Tipo spettrale



Per i dettagli, aspettate l'articolo sottomesso ad *Astronomia (UAI)* oppure scrivetemi (giumar69@gmail.com)

5^o passo:

PHOEBE... <http://phoebe.fiz.uni-lj.si>

The screenshot shows the PHOEBE software interface with the following parameters and values:

Parameter	Value
TAVH - Primary star effective temperature in K	5630
TAVC - Secondary star effective temperature in K	5346
PHSV - Primary star surface potential	4.08118
PCSV - Secondary star surface potential	3.93250
MET1 - Primary star metallicity	0.000
MET2 - Secondary star metallicity	0.000

Results summary:

Parameter	Value
$\Omega(L_1)$	4.153955
$\Omega(L_2)$	3.590611
Mass 1	58.035889
Mass 2	72.835041
Radius 1	3.716694
Radius 2	4.114953
$M_{bol} 2$	2.048412
$M_{bol} 1$	2.052166
$\log(g) 1$	5.061231

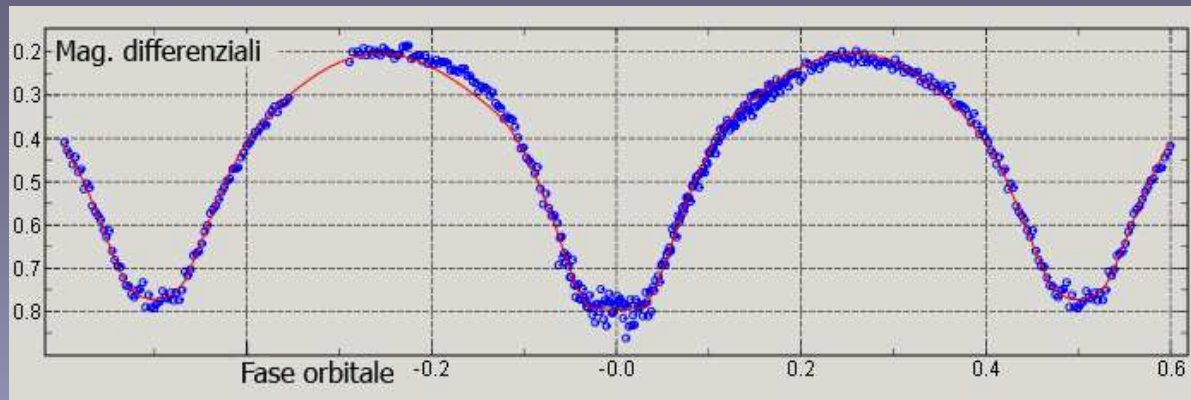
Fitting summary:

Parameter	Value	St
phoebe_pot1	4.081177	0.0
phoebe_hla[1]	18.331100	0.0

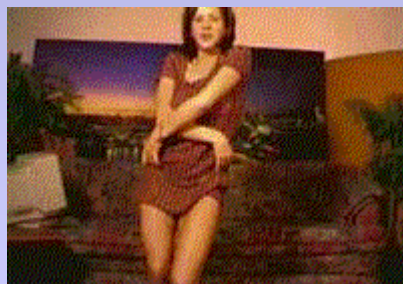
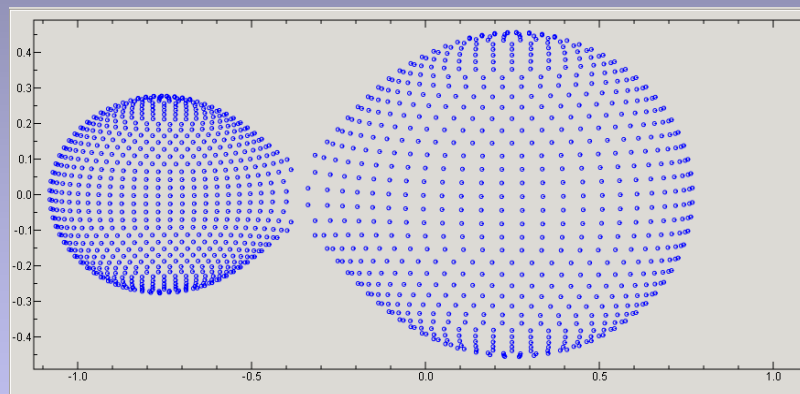
Readout completed.

*Per i dettagli, aspettate articolo sottomesso ad Astronomia(UAI)
oppure scrivetemi (giumar69@gmail.com)*

V 400 Lyrae



Dati non filtrati
(banda simile a V+R)



	Parametro	Banda V	Banda R	σ_1	σ_2
Parametri del fit	i	87.1°	87.4°	$\pm 0.2^\circ$	$\pm 3^\circ$
	q	3.02	3.04	0.02	0.05
	$\Omega_{1,2}$	6.51	6.53	0.03	0.07
	T_1^*	5200 K	5200 K	-	(≈ 200 K)
	T_2	5030 K	4990 K	20	40 K
	$g_{1,2}^*$	0.32	0.32	-	-
	x_1	0.65	0.59	0.05	0.08
	x_2	0.61	0.63	0.03	0.05
	$A_{1,2}^*$	0.6	0.6	-	(≈ 0.1)
derivante da T_1, T_2	L_2/L_1	2.28	2.23	0.08	0.15
derivanti da q, Ω	R_1^{back}/a	0.33	0.33		
	R_2^{back}/a	0.52	0.53		
assumendo $a = 2.35 R_{\text{Sole}}$	M_1	$0.68 M_{\text{Sole}}$	$0.67 M_{\text{Sole}}$		
	M_2	$2.04 M_{\text{Sole}}$	$2.04 M_{\text{Sole}}$		
	R_1^{back}	$0.78 R_{\text{Sole}}$	$0.78 R_{\text{Sole}}$		
	R_2^{back}	$1.22 R_{\text{Sole}}$	$1.25 R_{\text{Sole}}$		
	$M_{\text{bol-1}}$	5.95	5.95		
	$M_{\text{bol-2}}$	5.03	5.06		
assumendo $V_0 = 12.86$	d	400-600 pc			