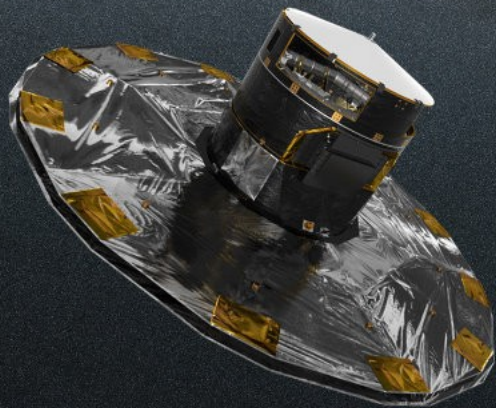


Distance des galaxies

Méthode des Céphéides



Cassiopée

Girafe

Céphée

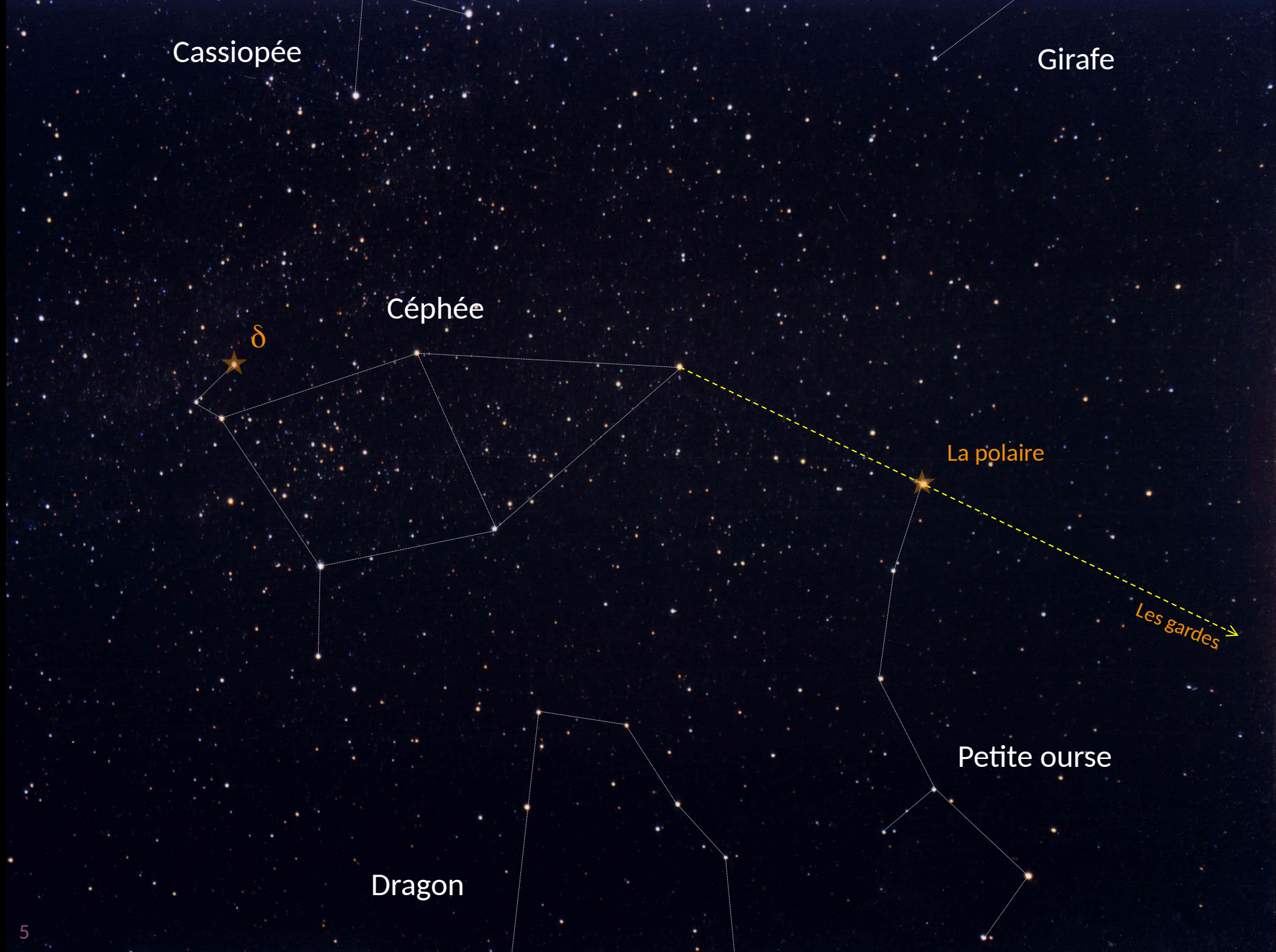
δ

La polaire

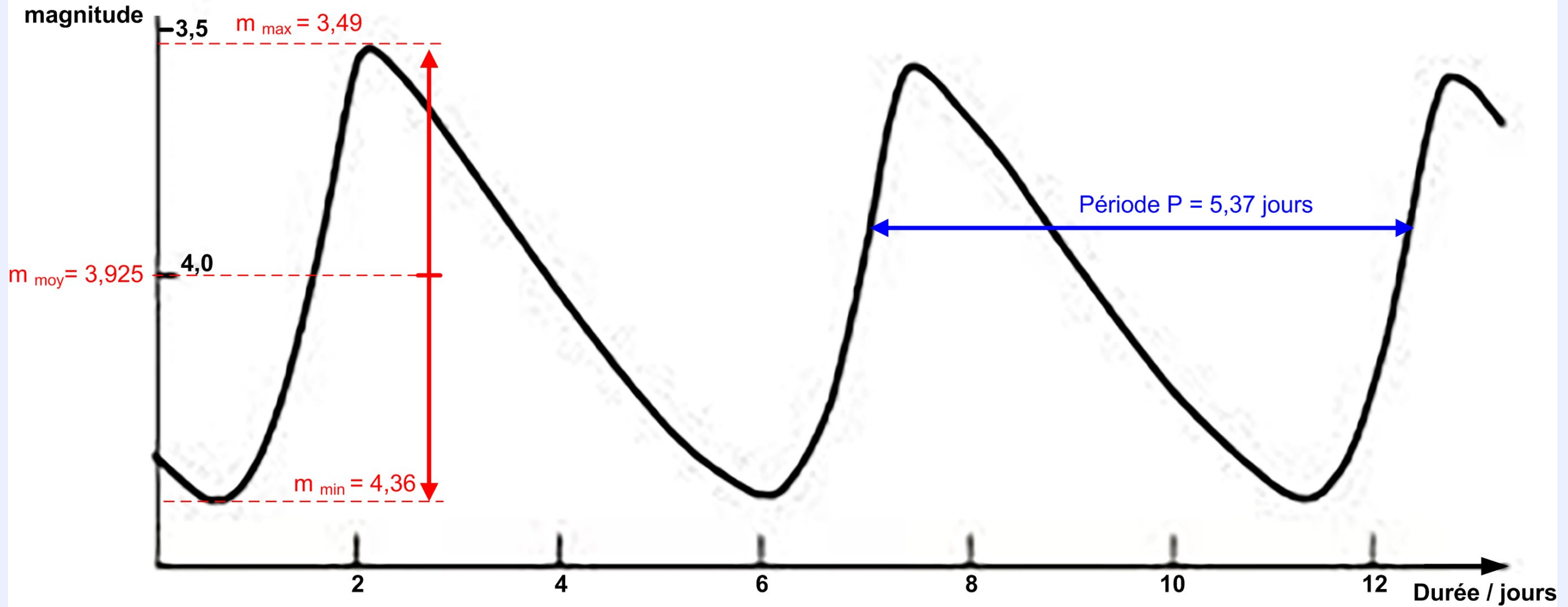
Les gardes →

Petite ourse

Dragon



Courbe de lumière de δ Céphée



Henrietta Leavitt
1868 -1921







Ref Harvard	OID	m max	m min	periode/jour
HV 1837	2656422			
HV 2019	2669134			
HV 2035	2669963			
HV 844	2652754			
HV 2046	36982			
	2670082			
HV 1809	2654086			
HV 1987	2665938			
HV 1825	2654939			
HV 1903	2660935			
	2625996			
	2626581			
HV 2060	2671969			
HV 2063	2671513			
HV 1873	2658898			
HV 843	2651695			
HV 1954	73940			
	2635739			
	2624812			
HV 847	2657265			
HV 1967	73944			
HV 840	73872			
HV 11182	2649487			
HV 837	73851			
HV 1877	36970			

<https://vizier.cds.unistra.fr/viz-bin/VizieR-3?-source=B/vsx/vsx>

VizieR

Search Criteria

Save in CDSportal

Keywords

- B/vsx/vsx

Tables

- B/vsx
- ..vsx
- ..refs

Preferences

max: 50

HTML Table

All columns

Compute

- Distance p
- Position angle θ
- Distance (x,y)
- Galactic
- J2000
- B1950
- Ecl. J2000
-

Sort by Distance

+ order -

No sort

Position in:

- Sexagesimal
- Decimal $^{\circ}$
- Truncated prec.

Time

- Time JD
- Time ISO

Mirrors

CDS, France

Simple Target | **List Of Targets**

Target Name (resolved by [Sesame](#)) or Position:

Target dimension:

NB: The epoch used for the query is the original epoch of the table(s) Radius Box size

[Fast Xmatch with large catalogs or Simbad](#)

B/vsx

1.B/vsx/vsx Variable Star indeX, Version 2025-06-01 (original column names in green) (10277813 rows)


Simple Constraint | **List Of Constraints**

Query by **Constraints** applied on Columns (Output Order: + -)

Standard Original

Show	Sort	Column	Clear	Constraint	Explain (UCD)
<input type="checkbox"/>	<input type="radio"/>	recno	<input type="text"/>		Record number assigned by the VizieR team. Should Not be used for identification. (meta.record)
<input checked="" type="checkbox"/>	<input type="radio"/>	OID	<input type="text"/>		⁽ⁱ⁾ Internal identifier, can be used to link out to the VSX database (Note 1) (meta.id)
<input checked="" type="checkbox"/>	<input type="radio"/>	n_OID	<input type="text"/>	(char)	B indicates bibliography (in file " ☺ refs.dat ") (meta.ref.url)
<input checked="" type="checkbox"/>	<input type="radio"/>	Name	<input type="text"/>	(char)	⁽ⁱ⁾ Variable star identifier (meta.id;meta.main)
<input checked="" type="checkbox"/>	<input type="radio"/>	V	<input type="text"/>		Variability flag (2) (VarFlag) (meta.note)
<input checked="" type="checkbox"/>	<input type="radio"/>	Type	<input type="text" value="DCEP"/>	(char)	Variability type, ariability type, as in GCVS catalog Variability type (see details of VSX type list) Variability type (see details of VSX type list) (meta.id)
<input checked="" type="checkbox"/>	<input type="radio"/>	l_max	<input type="text"/>	(char)	Limit flag on max (LimitFlagOnMax) (meta.code.error)
<input checked="" type="checkbox"/>	<input type="radio"/>	max	<input type="text"/>		⁽ⁿ⁾ [-6.0/25.2] Magnitude at maximum, or amplitude (MagMax) (phot.mag)
<input checked="" type="checkbox"/>	<input type="radio"/>	u_max	<input type="text"/>	(char)	Uncertainty flag on max (MaxUncertaintyFlag) (meta.code.error)
<input checked="" type="checkbox"/>	<input type="radio"/>	n_max	<input type="text"/>	(char)	Passband on max magnitude (4) (MaxPassband) (meta.note)
<input checked="" type="checkbox"/>	<input type="radio"/>	f_min	<input type="text"/>	(char)	Flag to indicate an amplitude (MinIsAmplitude) (meta.code)
<input type="checkbox"/>	<input type="radio"/>		<input type="text"/>		⁽ⁿ⁾ indicates a possible blank or NULL column ⁽ⁱ⁾ indexed column <input type="button" value="Submit"/>
<input checked="" type="checkbox"/>	<input type="radio"/>	l_min	<input type="text"/>	(char)	Limit flag on min (LimitFlagOnMin) (meta.code.error)
<input checked="" type="checkbox"/>	<input type="radio"/>	min	<input type="text"/>		⁽ⁿ⁾ [-0.02/28.0] Magnitude at minimum, or amplitude (MagMin) (phot.mag)
<input checked="" type="checkbox"/>	<input type="radio"/>	u_min	<input type="text"/>	(char)	Uncertainty flag on min (MinUncertaintyFlag) (meta.code.error)
<input checked="" type="checkbox"/>	<input type="radio"/>	n_min	<input type="text"/>	(char)	Passband on min magnitude (MinPassband) (meta.note)
<input type="checkbox"/>	<input type="radio"/>	Epoch	<input type="text"/>		⁽ⁿ⁾⁽ⁱ⁾ Epoch of maximum or minimum (HJD) (time.epoch)
<input type="checkbox"/>	<input type="radio"/>	u_Epoch	<input type="text"/>	(char)	Uncertainty flag on epoch (EpochUncertaintyFlag) (meta.code.error;time.epoch)


ALL cols

 [start AladinLite](#)

 [plot the output](#)

 [query using TAP/SQL](#)

<u>Full</u>	<u>OID</u>	<u>n_</u>	<u>Name</u>	<u>V</u>	<u>Type</u>	<u>l_</u>	<u>max</u> <u>mag</u>	<u>u_</u>	<u>n_</u>	<u>f_</u>	<u>l_</u>	<u>min</u> <u>mag</u>	<u>u_</u>	<u>n_</u>	<u>l_</u>	<u>Period</u> <u>d</u>	<u>u_</u>	<u>Sp.</u>	<u>RAJ2000</u> <u>deg</u>	<u>DEJ2000</u> <u>deg</u>
1	2656422		Gaia DR3 4685899411180869376	0	DCEP		16.580		G			17.680		G		1.548170000000		F	015.17383	-73.21015

 *Target retrieved from simbad (15.173835, -73.210149)*

[plot the output](#)

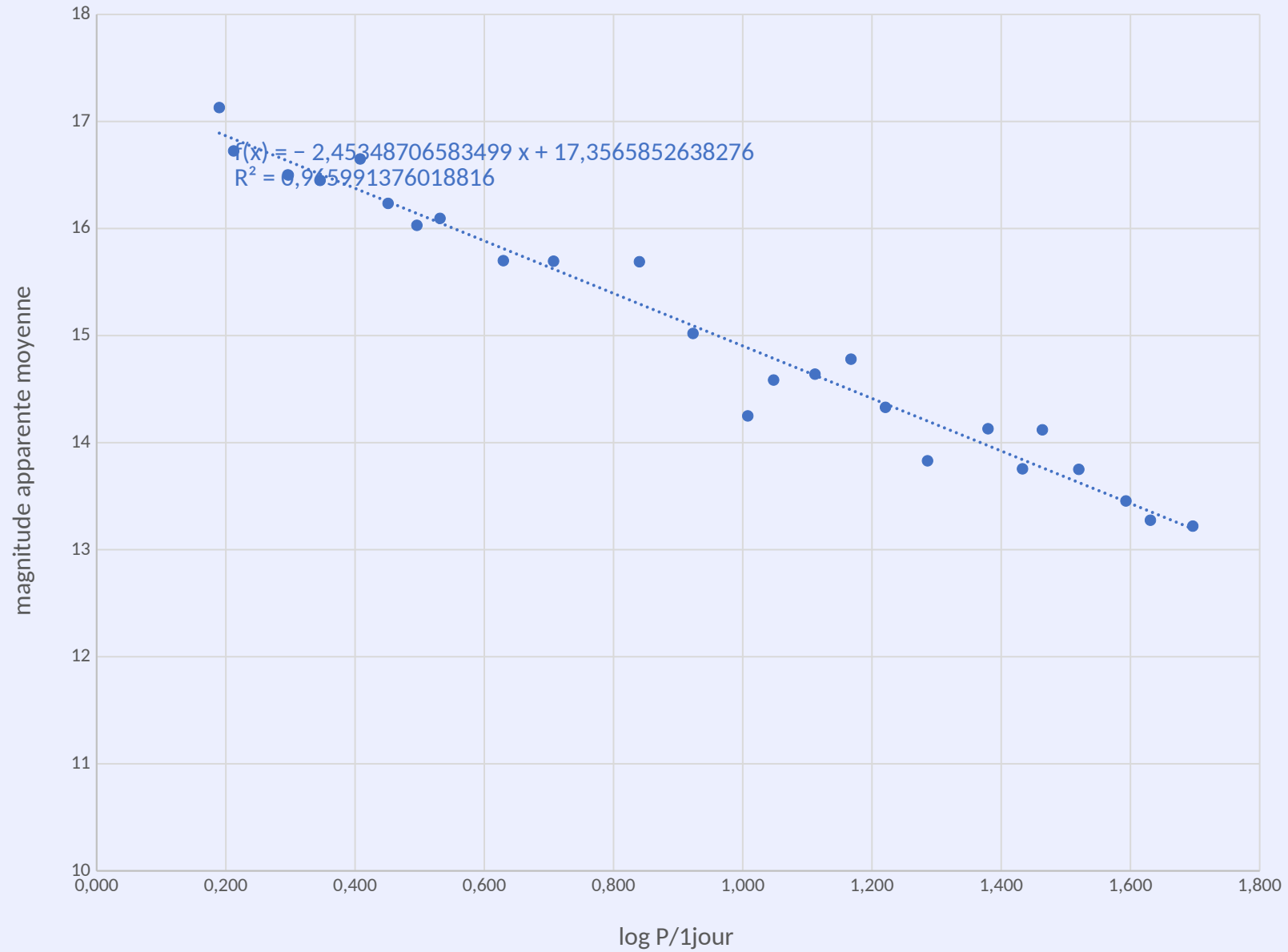


[query using TAP/SQL](#)

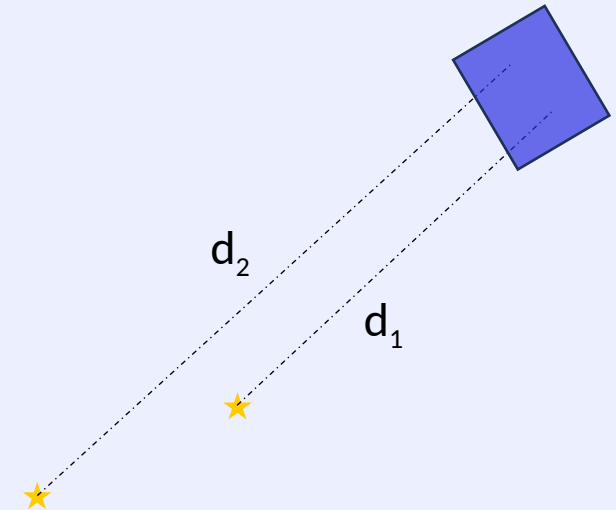
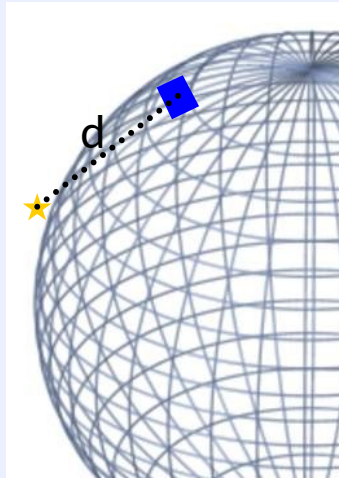
A	B	C	D	E	F		
Ref Harvard	OID	nom	m max	m min	periode/jour	logP/jour	m moy
HV 1837	2656422	Gaia DR3 4685899411180869376	16,58	17,68	1,55	=LOG10(F2)	=(D2+E2)/2
HV 2019	2669134	Gaia DR3 4687502503453207552	16,23	17,22	1,63		
HV 2035	2669963	Gaia DR3 4687513910877163776	16,04	16,96	1,98		
HV 844	2652754	Gaia DR3 4690570896794324224	15,86	17,04	2,22		
HV 2046	36982	TX Tuc	16,00	17,30	2,56		
	2670082	Gaia DR3 4690535987298253312	15,81	16,38	3,40		
HV 1809	2654086	Gaia DR3 4690570312678777984	15,74	16,73	2,83		
HV 1987	2665938	Gaia DR3 4690528634321096576	15,54	16,52	3,13		
HV 1825	2654939	Gaia DR3 4690517055088774656	15,28	16,12	4,26		
HV 1903	2660935	Gaia DR3 4687493466840674432	15,23	16,16	5,09		
	2625996	Gaia DR3 4688951792949192320	15,49	15,89	6,92		
	2626581	Gaia DR3 4688956057842431744	14,77	15,27	8,38		
HV 2060	2671969	Gaia DR3 4687509684629397760	14,00	14,50	10,18		
HV 2063	2671513	Gaia DR3 4690540935100437888	14,27	14,90	11,16		
HV 1873	2658898	Gaia DR3 4687491508336023168	14,29	14,99	12,94		
HV 843	2651695	Gaia DR3 4688997152099135232	14,43	15,13	14,71		
HV 1954	73940	ASAS J010401-7213.9	13,45	15,21	16,63		
	2635739	Gaia DR3 4685938482557887616	13,48	14,18	19,32		
	2624812	Gaia DR3 4688955782964714880	13,78	14,48	23,97		
HV 847	2657265	Gaia DR3 4690504204544129408	13,35	14,16	27,10		
HV 1967	73944	ASAS J010424-7200.6	13,50	14,74	29,09		
HV 840	73872	ASAS J005754-7224.8	13,11	14,39	33,12		
HV 11182	2649487	Gaia DR3 4689067658270101760	13,19	13,72	39,18		
HV 837	73851	ASAS J005557-7159.0	12,85	13,70	42,75		
HV 1877	36970	SS Tuc	12,87	13,57	49,72		

Ref Harvard	OID	nom	m max	m min	periode/jour	logP/jour	m moy
HV 1837	2656422	Gaia DR3 4685899411180869376	16,58	17,68	1,55	0,190	17,13
HV 2019	2669134	Gaia DR3 4687502503453207552	16,23	17,22	1,63	0,212	16,725
HV 2035	2669963	Gaia DR3 4687513910877163776	16,04	16,96	1,98	0,297	16,5
HV 844	2652754	Gaia DR3 4690570896794324224	15,86	17,04	2,22	0,346	16,45
HV 2046	36982	TX Tuc	16,00	17,30	2,56	0,408	16,65
	2670082	Gaia DR3 4690535987298253312	15,81	16,38	3,40	0,531	16,095
HV 1809	2654086	Gaia DR3 4690570312678777984	15,74	16,73	2,83	0,451	16,235
HV 1987	2665938	Gaia DR3 4690528634321096576	15,54	16,52	3,13	0,496	16,03
HV 1825	2654939	Gaia DR3 4690517055088774656	15,28	16,12	4,26	0,629	15,7
HV 1903	2660935	Gaia DR3 4687493466840674432	15,23	16,16	5,09	0,707	15,695
	2625996	Gaia DR3 4688951792949192320	15,49	15,89	6,92	0,840	15,69
	2626581	Gaia DR3 4688956057842431744	14,77	15,27	8,38	0,923	15,02
HV 2060	2671969	Gaia DR3 4687509684629397760	14,00	14,50	10,18	1,008	14,25
HV 2063	2671513	Gaia DR3 4690540935100437888	14,27	14,90	11,16	1,048	14,585
HV 1873	2658898	Gaia DR3 4687491508336023168	14,29	14,99	12,94	1,112	14,64
HV 843	2651695	Gaia DR3 4688997152099135232	14,43	15,13	14,71	1,168	14,78
HV 1954	73940	ASAS J010401-7213.9	13,45	15,21	16,63	1,221	14,33
	2635739	Gaia DR3 4685938482557887616	13,48	14,18	19,32	1,286	13,83
	2624812	Gaia DR3 4688955782964714880	13,78	14,48	23,97	1,380	14,13
HV 847	2657265	Gaia DR3 4690504204544129408	13,35	14,16	27,10	1,433	13,755
HV 1967	73944	ASAS J010424-7200.6	13,50	14,74	29,09	1,464	14,12
HV 840	73872	ASAS J005754-7224.8	13,11	14,39	33,12	1,520	13,75
HV 11182	2649487	Gaia DR3 4689067658270101760	13,19	13,72	39,18	1,593	13,455
HV 837	73851	ASAS J005557-7159.0	12,85	13,70	42,75	1,631	13,275
HV 1877	36970	SS Tuc	12,87	13,57	49,72	1,697	13,22

Petit nuage de Magellan



$$\text{Luminosité} = \text{Eclat} \times 4\pi \times d^2$$



$$\frac{E_1}{E_2} = \frac{d_2^2}{d_1^2}$$

Magnitudes apparentes de deux étoiles :

$$m_1 - m_2 = -2,5 \log \frac{E_1}{E_2}$$

Si les étoiles sont identiques mais situées à des distances différentes :

$$m_1 - m_2 = -2,5 \log \frac{d_2^2}{d_1^2} = 5(\log d_1 - \log d_2)$$

$$m_1 - m_2 = 5(\log d_1 - \log d_2)$$

[Simple Target](#)[List Of Targets](#)Target Name (resolved by [Sesame](#)) or Position:

Clear

J2000



Target dimension:

2

arcmin



NB: The epoch used for the query is the original epoch of the table(s) Radius Box size

Full	OID	n	Name	V	Type	l	max mag	u	n	f	l	min mag	u	n	l	Period d	u	Sp	RAJ2000 deg	DEJ2000 deg
1	9066	B	del Cep	0	DCEP		3.490		V			4.360		V		5.366290000000		F5Ib-G1Ib	337.29279	+58.41519

External Links



Links open in a new window. Not all links may be valid for this particular target.

Location

>> Go

Bibliographic references from CDS Strasbourg. (0 references).

Basic data :

* **del Cep** -- Classical Cepheid Variable

Other object types: [?](#) * (*,AG,...), ** (ADS,CCDM,...), cC* (2019Sci), V* (V*,AAVSO), UV (CEL,TD1), IR (IRAS,IRC), SB* (2024A&A), NIR (2MASS), MIR (WISE)

ICRS coord. (*ep*=J2000) : 22 29 10.2626640314 +58 24 54.697613650 (Optical) [0.1222 0.1215 90] A 2020yCat.1350....0G

FK4 coord. (*ep*=B1950 *eq*=1950) : 22 27 18.5346416067 +58 09 31.780091300 [0.1222 0.1215 90]

Gal coord. (*ep*=J2000) : 105.1943137116799 +00.5305978907908 [0.1222 0.1215 90]

Proper motions *mas/yr* : 14.560 3.238 [0.148 0.139 90] A 2020yCat.1350....0G

Radial velocity / Redshift / cz : V(km/s) -21.1548 [0.0578] / z(spectroscopic) -0.000071 [0.000000] / cz -21.15 [0.06]
(NIR) A 2022ApJS..259...35A

Parallaxes (*mas*): 3.5551 [0.1475] A 2020yCat.1350....0G

Spectral type: F5Iab:+B7-8 D 2013AJ....146...93E

Fluxes (8) :
U 4.71 [~] C 2002yCat.2237....0D
B 4.35 [~] C 2002yCat.2237....0D
V 3.75 [~] C 2002yCat.2237....0D
G 3.850600 [0.013693] C 2020yCat.1350....0G
I 3.219 [~] D 2006MNRAS.369..723N
J 2.865 [0.200] D 2003yCat.2246....0C
H 2.608 [0.190] D 2003yCat.2246....0C
K 2.354 [0.216] D 2003yCat.2246....0C

SIMBAD [Query around](#) within 2 arcmin



All (CDSPortal)

Send to



[Photometry](#) within 5 arcsec [?](#)

δ Céphée

Magnitude apparente moyenne : $m_1 = \frac{m_{max} + m_{min}}{2} = \frac{3,49 + 4,36}{2} = 3,925$

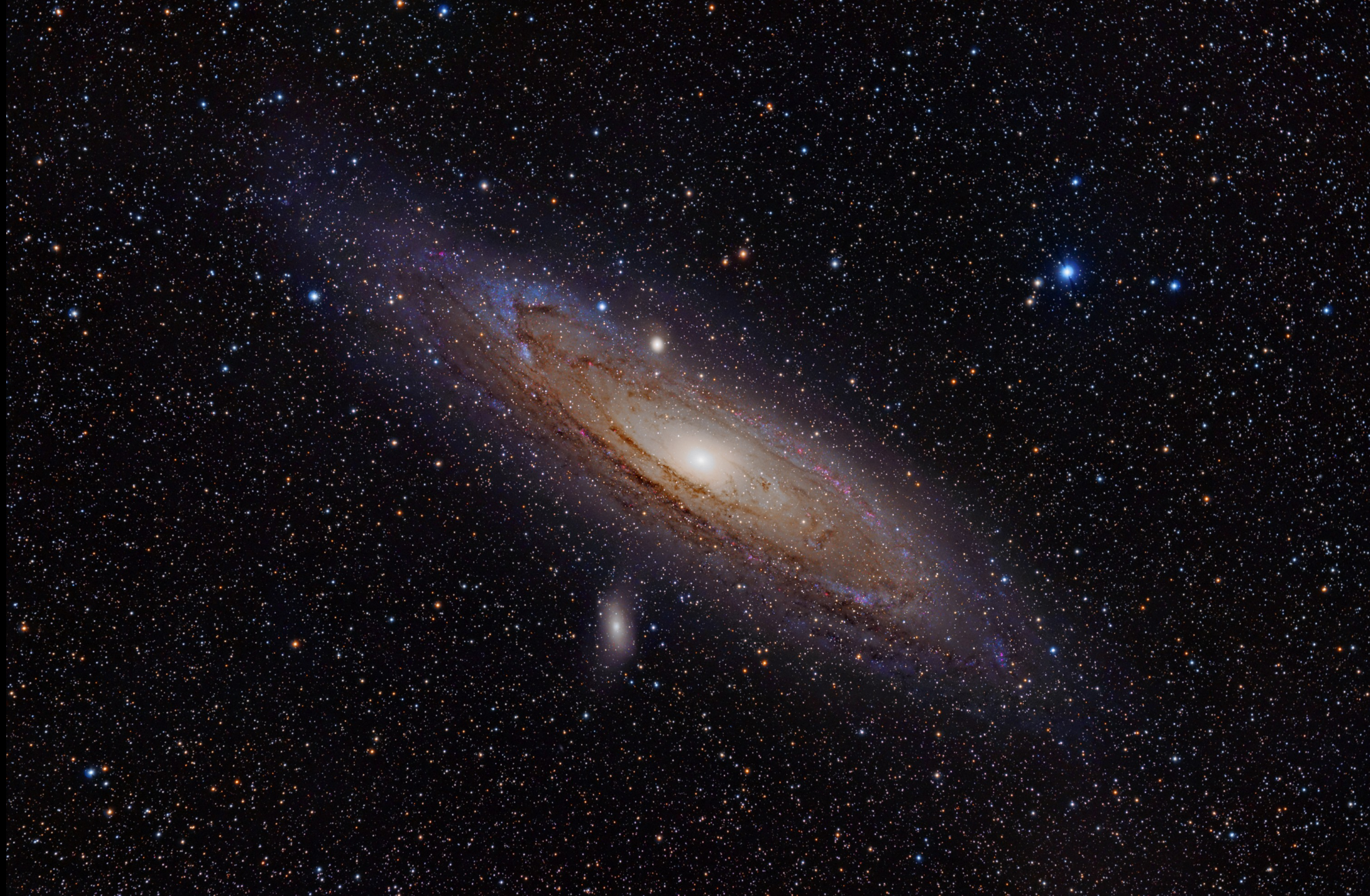
Distance : $d_1 = \frac{1}{parallaxe} = \frac{1}{3,5551 \times 10^{-3}} = 281,3 pc$

Période : $P = 5,3663$ jours

Magnitude apparente moyenne de la même étoile dans le SMC : $m_2 = -2,4535 \times \log P + 17,357 = 15,567$

$$\log d_2 = \log d_1 + \frac{m_2 - m_1}{5} = 2,4492 + \frac{15,567 - 3,925}{5} = 4,778 \quad d_2 = 6,0 \times 10^4 pc = 1,95 Ma.l$$

C'est la distance du petit nuage de Magellan



VizieR

Search Criteria

[Save in CDSportal](#)

Keywords

- B/vsx/vsx

Tables

- B/vsx
- ..vsx**
- ..refs

Preferences

max: 50 ▾

HTML Table ▾

- All columns
- Compute**
- Distance ρ
- Position angle θ
- Distance (x,y)
- Galactic
- J2000
- B1950
- Ecl. J2000
- default
- Sort by Distance
- + order -
- No sort

Position in:

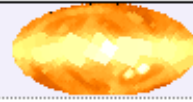
- Sexagesimal

[Simple Target](#) [List Of Targets](#)

[Fast Xmatch with large catalogs or Simbad](#)

Target Name (resolved by [Sesame](#)) or Position: ▾ Target dimension: ▾

NB: The epoch used for the query is the original epoch of the table(s) Radius Box size

Radmm IR OptUV X Y AAVSO International Variable Star Index VSX (Watson+, 2006-) 

B/vsx [Post annotation](#)

1.B/vsx/vsx Variable Star index, Version 2025-06-01 (original column names in green) (10277813 rows)

[Simple Constraint](#) [List Of Constraints](#)

Query by [Constraints](#) applied on Columns (Output Order: + -)

Standard Original

Show	Sort	Column	Clear	Constraint	Explain (UCD)
<input type="checkbox"/>	<input type="radio"/>	recno	<input type="text"/>		Record number assigned by the VizieR team. Should Not be used for identification. (meta.record)
<input checked="" type="checkbox"/>	<input type="radio"/>	OID	<input type="text"/>		⁽ⁱ⁾ Internal identifier, can be used to link out to the VSX database (Note 1) (meta.id)
<input checked="" type="checkbox"/>	<input type="radio"/>	n_OID	<input type="text"/>	(char) B indicates bibliography (in file " refs.dat ") (meta.ref.url)	
<input checked="" type="checkbox"/>	<input type="radio"/>	Name	<input type="text"/>	(char) ⁽ⁱ⁾ Variable star identifier (meta.id;meta.main)	
<input checked="" type="checkbox"/>	<input type="radio"/>	V	<input type="text"/>	Variability flag (2) (VarFlag) (meta.note)	
<input checked="" type="checkbox"/>	<input type="radio"/>	Type	<input type="text" value="DCEP"/>	(char) Variability type, ariability type, as in GCVS catalog Variability type (see details of VSX type list) Variability type (see details of VSX type list) (meta.id)	
<input checked="" type="checkbox"/>	<input type="radio"/>	l_max	<input type="text"/>	(char) Limit flag on max (LimitFlagOnMax) (meta.code.error)	
<input checked="" type="checkbox"/>	<input type="radio"/>	max	<input type="text"/>	mag ⁽ⁿ⁾ [-6.0/25.2] Magnitude at maximum, or amplitude (MagMax) (phot.mag)	
<input checked="" type="checkbox"/>	<input type="radio"/>	u_max	<input type="text"/>	(char) Uncertainty flag on max (MaxUncertaintyFlag) (meta.code.error)	
<input checked="" type="checkbox"/>	<input type="radio"/>	n_max	<input type="text"/>	(char) Passband on max magnitude (4) (MaxPassband) (meta.note)	

[start AladinLite](#)[plot the output](#)[query using TAP/SQL](#)

<u>Full</u>	<u>OID</u>	<u>n_</u>	<u>Name</u>	<u>V</u>	<u>Type</u>	<u>l_</u>	<u>max</u> <u>mag</u>	<u>u_</u>	<u>n_</u>	<u>f_</u>	<u>l_</u>	<u>min</u> <u>mag</u>	<u>u_</u>	<u>n_</u>	<u>l_</u>	<u>Period</u> <u>d</u>	<u>u_</u>	<u>Sp</u>	<u>RAJ2000</u> <u>deg</u>	<u>DEJ2000</u> <u>deg</u>
1	8702918		Gaia DR3 380754279629918080	0	DCEP		20.140		G			20.810		G		9.174900000000			009.32480	+40.23845

Gaia DR3 380754279629918080

Magnitude apparente moyenne : $m_1 = \frac{m_{max} + m_{min}}{2} = \frac{20,14 + 20,81}{2} = 20,475$

Période : $P = 9,1749$ jours

Magnitude apparente moyenne de la même étoile dans le SMC : $m_2 = -2,4535 \times \log P + 17,357 = 14,995$

Distance de SMC : $d_2 = 6,0 \times 10^4$ pc

$$\log d_1 = \log d_2 + \frac{m_1 - m_2}{5} = 4,778 + \frac{20,475 - 14,995}{5} = 5,8739$$

$$d_1 = 7,5 \times 10^5 \text{ pc} = 2,4 \text{ Ma.l}$$

C'est la distance de M31