

375(7): Comparison of Data from Wikipedia and Stanford Sites on the Hulse Taylor Binary Pulsar

	m_c	a	e	d	r_{min}	$\Delta\phi(\text{exp})$	$\Delta\phi(\text{Einstein})$
Stanford	$2.804 \times 10^{30} \text{ kg}$	$8.6696 \times 10^8 \text{ m}$	0.617155 ± 0.00007	$5.3676 \times 10^8 \text{ m}$	$33192 \times 10^8 \text{ m}$	4.226 ± 0.002 degrees per cent year	14492 degrees per cent year
Wikipedia	$2.759 \times 10^{30} \text{ kg}$	$1.951 \times 10^9 \text{ m}$	0.6171334	$1.20795 \times 10^8 \text{ m}$	$7.4600 \times 10^8 \text{ m}$	4.2 degrees / cent year	3942 degrees per cent year

Here

- m_c = mass of companion star
- a = semi major axis
- e = eccentricity
- d = half right asc. asc. tide
- r_{min} = periastron
- $\Delta\phi$ = advance of periastron.

In the non relativistic limit:

$$d = a(1 - e^2) \quad - (1)$$

$$r_{min} = \frac{d}{1 + e} \quad - (2)$$

The Einstein theory give:

$$\Delta\phi = \frac{6\pi m_c G}{dc^2} \quad - (3)$$

with $G = 6.67408(31) \times 10^{-11} \text{ m}^3 \text{ kg}^{-1} \text{ s}^{-2} \quad - (4)$

$c = 2.99792458 \times 10^8 \text{ m s}^{-1} \quad - (5)$

2) It is seen that the data are wildly self inconsistent for these two sites. The Einstein theory of relativity is wildly incorrect from both sets of data.

Note

The Stanford site gives a projected semi major axis of

$$a \sin i = 2.3424 \pm 0.007 \text{ light seconds}$$

also

$$\sin i = 0.81 \pm 0.16$$

-(6)
-(7)

is the sine of the inclination angle. Using:

$$1 \text{ light second} = 2.99792458 \text{ metres} \quad \text{-(8)}$$

give:

$$a = 8.6696 \times 10^8 \text{ metres} \quad \text{-(9)}$$