

- The 3PN accurate ‘**Kepler equation**’, which connects the eccentric anomaly to the coordinate time reads

$$l \equiv n(t - t_0) = u - e_t \sin u + \left( \frac{g_{4t}}{c^4} + \frac{g_{6t}}{c^6} \right) (v - u) \\ + \left( \frac{f_{4t}}{c^4} + \frac{f_{6t}}{c^6} \right) \sin v + \frac{i_{6t}}{c^6} \sin 2v + \frac{h_{6t}}{c^6} \sin 3v$$

★  $l$  is the mean anomaly,  $n$  the mean motion &  $e_t$  the ‘time eccentricity’

★  $g_{4t}$ ,  $g_{6t}$ ,  $f_{4t}$ ,  $f_{6t}$ ,  $i_{6t}$  &  $h_{6t}$  are 2PN & 3PN order orbital functions expressible in terms of  $E$ ,  $L$ ,  $m_1$  and  $m_2$