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【所属分类】： **自然科学--天文学**

【标题】： 水星引力辐射与强场推迟引力

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【摘要】： 对水星近日点进动的观测已有长期可靠的数据. 我们已用推迟引力求解了水星近日点的进动，与天文观测结果符合得极好, 推迟引力成为唯一能够成功解释水星进动的引力理论。由推迟引力的切向引力辐射场计算出的水星近日点的世纪进动值与观测值符合得极好，这意味着水星近日点的进动正是存在引力辐射场的最可信证据, 水星近日点的世纪进动也成为检验引力辐射理论的试金石。鉴于无法排除其它星体对脉冲双星的摄动, 也无法独立确定双星的质量, 所以关于由引力辐射造成的脉冲双星的周期变化的观测数据是很不准确的. 本文从理论和观测两方面证明, 对于有引力辐射的系统，质量不再守恒，动量不再守恒，单极和偶极辐射均应存在，仅用四极引力辐射理论不能正确解释水星进动, 四极引力辐射理论对脉冲双星周期变化的解释与观测值的一致只是一种不可信的巧合。给出了适用于强场的推迟引力表达式.

【关键词】： 水星进动 推迟辐射引力 单极、偶极和四极引力辐射 强场推迟引力

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【TITILE】： Gravitational Radiation of Mercury and Retarded Gravitation for a Strong Field

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【ABSTRACT】： The observations on the precession of mercury have been accumulated more than hundred years, and the rotation of astronomical coordinate systems and perturbations from other planets, have been taken into a full consideration, so the observations are reliable. The calculation according to the retarded gravitational radiation field is well matched with the observations on the variation of period of Mercury orbit, it shows that the precession of mercury is a solid evidence of existence of gravitational radiation, and the precession of mercury's perihelion becomes the touchstone of all gravitational radiation theories. The radiation theory of gravitational quadruple on pulsars without a consideration on monopole and dipole radiations due to non-conservation of mass and kinetic momentum for a radiation system. We show that this theory is completely unable to pass the examination of the precession of Mercury, so the agreement on the rate of period change of PSR1913+16 between the observations and the radiation theory of gravitational quadruple is only a kind of not credible coincidence. The expression of retarded gravitation for a strong field is given.

【KEYWORDS】： precession of perihelion of Mercury, retarded gravitational radiation，radiation of gravitational monopole, dipole and quadruple, retarded gravitation for a strong field

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