

跟踪·扫描

30 亿光年外星系数数量锐减

据美国 *Physics Today*, 2000, 8:20 报道, 在罗彻斯特举行的美国天文学会议上, 牛津大学的多尔顿 (G. Dalton) 与约翰·霍普金斯大学的格莱兹布鲁克 (K. Glazebrook) 介绍了 2 度视场星系红移测量计划 (2DFGRS) 的结果。

统计的结果表明, 在 30 亿光年外星系数数量锐减, 这或许反映了宇宙的限制。2DFGRS 是第一天、地双方的合作项目, 即用位于悉尼附近的一个大型望远镜的光谱仪同时测量多个星系的光谱。每夜可记录 3000 个星系的红移, 再按照哈勃定律计算星系的距离。按计划目前已完成时, 将观测到大约 8% 范围内的 25 万个星系的红移, 可测距离为 40 亿光年。该小组还发现星系聚集区的引力对

爆炸宇宙学的推论。

万有引力在亚毫米范围内仍随距离成平方反比

据美国 *Physics Today*, 2000, 9:22 报道, 美国华盛顿大学的物理学家做了亚

毫米至 1 厘米的吸引物。改变两个吸引物的位置可使它们的共同地心发生偏转。吸引物每转动一圈, 作用于物体的引力便有 1 次脉动。激光测量表明, 引力的平方反比定律在 0.2 毫米范围内仍有效。在罗切斯特举行的国际相对论学会上, 华盛顿大学的因拉克 (Gundlach) 介绍了这一结果。

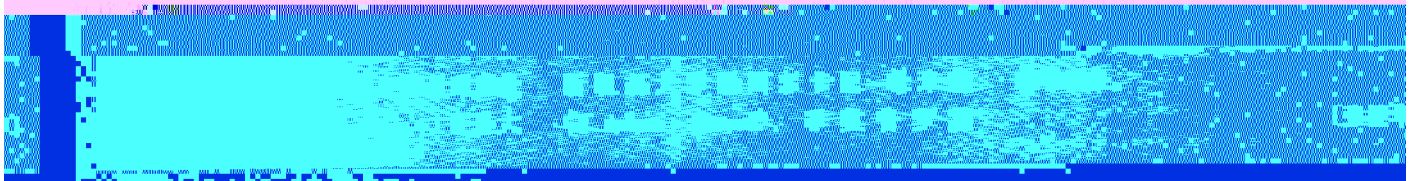
《科技日报》认为在普朗克距离 (即 10^{-35} 厘米) 以内, 引力的强度与其他基本

(S. Dimopoulos) 和纽约大学的德瓦利 (G. Dvali) 在 1998 年认为引力反常可能在亚毫米距离上就能观察到 (简称 ADD 假设)。

ADD 假设还有待于加速器上的进一步检验。ADD 认为在大型强子对撞机 (LHC) 上, 质子能打出引力子, 还可能产生微小黑洞。

在建县之中

据美国《华盛顿邮报》2000 年 11 月 2 日报道, 一个国际研究小组在非洲的埃塞俄比亚发现了 10 种新的原始哺乳动物化石。这是世界上最大的哺乳动物化石发现地。在埃塞俄比亚的阿法尔地区, 这个研究小组于 2000 年 11 月 4 日在那里发现了 10 种新的原始哺乳动物化石。这些化石属于 2000 万年前, 是



SPECIAL

3 A Scientific Project Searching for the Origin of Chinese Civilization

Yin Weizhang

The Xia-Shang-Zhou chronology project is the most important interdisciplinary research program of social humanities and natural sciences in China. Based on this project, the historic chronology of China has been shifted from 841 BC to 2070 BC. This achievement lays the foundation for searching for the origin of Chinese civilization.

8 The Remarkable Beginning of the Knowledge Innovation Program

Tang Zhangcheng

The article gives a brief introduction to the first phase of the pilot project of the Knowledge Innovation Program in Chinese Academy of Sciences, including its objectives, management and operation, evaluation system and achievements.

FRONTIER

12 Exploit Oceanic Resources in the 21st Century

Zhu Jimao

The article emphasizes the important role played by high-tech such as the development of gas hydrate, the mining of multi-metallic nodules, and so on.

16 The Highlights of Experimental Particle Physics in 2000

Qi Nading

Three exciting highlights in the field of experimental particle physics appeared in the world in 2000. They are the direct detection of the τ neutrino for the first time, the evidences of the Higgs Boson, the first experimental result of the CP violation of B meson reported by B-Factories departing from the prediction.

20 To Solve Some Geometry Problems by Means of Machine

Zhang Jingzhong

It was a dream to make a machine to solve the protean problems in geometry. Now the PC software can not only give the final results for many hard geometry problems, but also provide the short, elegant and traditional solutions.

24 Perpetual Debate on the Origin of Bird

Hou Lianhai

Because of the discovery of *Cathayornis* group and *Confuciusornis* group, the field of avian origin has undergone revolutionary changes in the last ten years in China, especially in west Liaoning province. Long-time debates on the origin of bird and flight are also introduced, especially different theories are concerned. Four different prototypes of *Confuciusornis* group in morphology show that the bird origin is not monophyletic, but polygeny. Dinosaur is not the ancestor of bird.

FORUM

30 *Kexue* (Science) and the Spreading of "Kexue Jingshen" (Scientific Spirit) in China

Fan Hongye

"Kexue Jingshen" (scientific spirit), a Chinese word first coined in 1916 in Chinese literatures, has been spreading for dozens of years by *Kexue*.

34 A Survey of the Personnel Training: Issues to be Studied and Functions in Organization Practice

Xie Xiaofei, Chang Yuxuan

The Personnel Training gains special attention in modern business management, as an enterprise today profits more from flexible adaptation than from routine operations. The key issues concerned with training include scientific assessment of efficiency, framing of models, and selection of methods. Some insights are given by studies and corporation practice.

38 The Olympic Spirit in Fundamental Researches

Wu Zhongliang

By comparing the Olympic games with fundamental researches, this article emphasizes the Olympic spirit in science, calls for a positive attitude and sustainable strategy in the development of fundamental researches.

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