



扫一扫，听音频

第一部分

科技

Technology

第 1 篇

Research from China's LAMOST suggests Milky Way is older than believed

(2022.3.24)

Based on **monitoring** data collected by China's Large Sky Area **Multi-Object** Fiber Spectroscopic Telescope (LAMOST) and **European Space Agency** (ESA) Gaia Mission, **astronomers** have obtained the most accurate information so far concerning large samples of **stellar** ages, and their work suggests that the **Milky Way** is older than has long been believed.

They analyzed a survey of nearly 250,000 stars—**ranging** in age **from** 13.8 billion **to** 15 billion years—to track our galaxy's expansion by **cross-referencing** their lifecycles with the Milky Way's movements.

The **National Astronomical Observatories (NAOC)**, the Chinese Academy of Sciences, the operator of the LAMOST—a leading **optical** telescope project in China that is also known as the Guo Shoujing Telescope, **hailed** the development in a statement it provided to the *Global Times* on Thursday, saying the findings based on the large telescope in North China's Hebei Province clearly reconstructed images of the **formation** and **evolution** of the Milky Way during its “infancy and adolescence” in a **chronological** fashion.

一、背景简介

LAMOST, 大天区面积多目标光纤光谱天文望远镜, 又称郭守敬望远镜, 是一架新类型的大视场兼备大口径望远镜, 应用薄镜面主动光学加拼接镜面主动光学技术。它位于河北省兴隆县中国科学院国家天文台兴隆观测站。LAMOST 在大规模光学光谱观测和大视场天文学研究方面居于国际领先的地位。

为了理解银河系的形成, 需要确定大量样本恒星的精确年龄。处于亚巨星演化阶段的恒星相当于一个精确的恒星钟, 天文学家可根据其亮度, 在短暂的恒星阶段精确测量其年龄。然而, 由于这个演化阶段太短, 对处于亚巨星阶段恒星的观测结果较少, 之前也缺少大规模的测量数据。本文即讲述天文学家根据中国郭守敬望远镜和欧洲航天局盖亚空间天文台的数据, 推测银河系准确年龄得出的新发现。研究结果表明, 银河系可能经过了不同的演化阶段, 其起点是约 130 亿年前盘族恒星的形成。

二、全文翻译

中国郭守敬望远镜观测结果表明银河系比人们认为的更古老

根据中国大天区面积多目标光纤光谱天文望远镜 (LAMOST) 和欧洲航天局 (ESA) 盖亚任务 (Gaia Mission) 收集的监测数据, 天文学家获得了迄今为止最精确的大样本恒星年龄信息, 他们的发现表明银河系比人们长期以来认为的更为古老。

天文学家对近 25 万颗恒星进行了分析, 这些恒星的年龄从 138 亿年到 150 亿年不等, 通过对恒星生命周期和银河系的运动进行交叉参考来追踪银河系的扩张。

中国科学院国家天文台 (NAOC)、LAMOST (中国先进的光谱望远镜, 又称郭守敬望远镜) 运营商于周四在《环球时报》发表声明, 对这一进展表示赞赏。声明中称, 这项基于中国北部河北省大型望远镜的发现, 以时间顺序清晰地再现了银河系在“幼年和青少年期”的形成和演化过程。

三、单词点津

- 1 **monitor** ['mɒnɪtə(r)] *v.* 监视、监听 *n.* 显示器, 监控器
- 2 **multi-object** multi 作词缀表示“多个”的意思。object *n.* 目标、客体 *v.* 反对, 比如想对对方观点表示不同意, 可以说“Object!”。
- 3 **ESA, European Space Agency** 欧洲航天局, 是一个致力于探索太空的政府间组织, 总部设在法国巴黎。
- 4 **astronomer** [ə'strɒnəmə(r)] *n.* 天文学家, 词根是 astro-。同根词还有 astronomical *adj.* 天文的, astronomy *n.* 天文学, 这个词还可以用来表达金额、数量等如天文数字般的, 形容价格极其昂贵。
- 5 **stellar** ['stelə(r)] *adj.* 星球的。这个单词中, 词根 -stell- 表示“星”, -ar 是形容词词尾。
- 6 **Milky Way** 银河, 源于希腊神话。宙斯跟阿尔克墨涅生下了赫拉克勒斯。宙斯希望赫拉克勒斯将来能长生不老, 就偷偷地把赫拉克勒斯放在女神赫拉身旁, 想让他吃了赫拉的乳汁, 变成长生不老之身。谁知赫拉克勒斯吮吸太猛, 惊醒了赫拉。后者发现吃奶的不是自己的儿子, 便一把将孩子推开, 乳汁划过天际, 便成了 Milk Way, 银河。
- 7 **range from...to...** 表示范围从……到……
- 8 **cross-reference** *v.* 相互参照; 交叉引用
- 9 **National Astronomical Observatories (NAOC)** 中国科学院国家天文台, 成立于2001年4月, 是由中国科学院北京天文台、云南天文台、南京天文光学技术研究所、乌鲁木齐天文站和长春人造卫星观测站等两台一所两站整合而成。
- 10 **optical** ['ɒptɪkl] *adj.* 光学的; 视觉的
- 11 **hail** [heɪl] *v.* 赞扬, 欢呼 *n.* 冰雹
- 12 **formation** [fɔ:'meɪʃn] *n.* 构成, 形成。其词根是动词 form。
- 13 **evolution** [i:və'lu:ʃn] *n.* 进化, 演变, 发展
- 14 **chronological** [kronə'lɒdʒɪkl] *adj.* 按发生时间顺序排列的, 按时间计算的。同根词 chronicle *n.* 编年史。

四、难句解析

难句 1

Based on monitoring data collected by China's Large Sky Area Multi-Object Fiber Spectroscopic Telescope (LAMOST) and European Space Agency (ESA) Gaia Mission, astronomers have obtained the most accurate information so far concerning large samples of stellar ages.

- 1 **based on**, 定语前置, 整个前半句都是后半句中 information 的修饰成分。
- 2 **collected** 修饰前面的 data, 因为 data 是被收集, 所以用 ed 形式。
- 3 **have obtained**, 现在完成时, 表示过去的行为对现在有影响。
- 4 **concerning** 修饰前面的 information, information 和这个动词为主动关系, 所以用 ing 形式。

难句 2

...the operator of the LAMOST—a leading optical telescope project in China that is also known as the Guo Shoujing Telescope,...

这个句子使用了同位语, 破折号后面即是对 LAMOST 的补充说明, that 引导定语从句。

五、练习题

选择题

- 1 _____ suggests that the Milky Way is older than has long been believed.
A. The data only collected through LAMOST
B. The large samples of stellar ages
C. The work of European Space Agency
D. The most accurate information so far

- 2 To be able to track our galaxy's expansion, we need to _____ nearly 250,000 stars, lifecycles with the Milky Way's movements.
- A. cross-reference
B. cross-check
C. cross-index
D. illustrate
- 3 The Guo Shoujing Telescope clearly reconstructed images of the formation and evolution of the Milky Way during its "infancy and adolescence" in a chronological fashion. What would be the best vocabulary to replace "formation"?
- A. Development.
B. Involvement.
C. Establishment.
D. Construction.

问答题

Do your research and answer these questions orally or by writing.

- 1 How important do you think the space research is to our country and why?
- 2 Do you believe in the near future humans will inhabit other planets and why?

第 2 篇

Fossil found on edge of the roof of the world reveals an owl active during the day 6 million years ago

(2022.3.29)

A species of **diurnal** owls was identified from a piece of **fossil** found on northeastern edge of the Qinghai-Xizang **Plateau** in China, giving clues on how the diurnal birds evolved in the mostly **nocturnal** species.

Most owls living today are nocturnal, giving them a special status in myths of different cultures and **symbolize** magic due to the **popularity** of *Harry Potter* series.

A research team from the Institute of **Vertebrate Paleontology and Paleoanthropology** of the Chinese Academy of Sciences discovered the fossil in good state of **preservation**. The **specimen** is close to the northern hawk owl, a medium-sized owl of the northern **latitudes**, non-migratory and diurnal. The **extinct** owl belongs to clade Surniini which contains most living diurnal owl species.

A **comparison** of **sclera** bones of the **Miocene** owl and 55 reptiles and 360 birds, including many owls, showed the ancient bird's eyes are less open to light and enable it to see things clear during the day, according to a statement by the institute.

一、背景简介

猫头鹰是一种大家很熟悉的鸟类，在全球大部分地区都有分布，种类多达 130 多种，属于“鸮形目”。人们通常认为它们是夜行性的肉食性鸟类，白天躲起来睡觉，夜幕降临时才会开始活动。

本文讲述了研究人员在青藏高原发现了古老的猫头鹰化石，显示 600 万年前在这里曾经生活着一种有可能是世界上最古老的猫头鹰，在白天行动。这是通过对它们的“巩膜骨”研究得知的。“巩膜”是眼球

壁的重要组成部分，也是可以帮助生物看清楚东西的关键部位之一。古猫头鹰的眼睛是可以削弱阳光的，而为什么经历了长期的进化，现代猫头鹰昼伏夜出，还需要更多的化石证据。

二、全文翻译

“世界屋脊”发现的化石表明 600 万年前猫头鹰在白天活动

在中国青藏高原东北缘发现的一块化石中，发现了一种昼行性的猫头鹰，这为研究昼行性鸟类如何进化为夜行性物种提供了线索。

当今大多数猫头鹰都是夜行性的，这使得它们在不同文化的神话中都有着特殊的地位，而且由于《哈利·波特》系列广为流行，猫头鹰甚至象征着魔法。

中国科学院古脊椎动物与古人类研究所的一个研究团队发现了这块保存完好的化石。该标本接近北鹰鸮——一种中等大小的北纬度猫头鹰，具有非迁徙性，并于日间行动。这种已灭绝的猫头鹰属于猛鸮类，其中包含大多数现存的昼行性的猫头鹰物种。

研究报告中称，研究团队将此块中新世猫头鹰化石的巩膜骨与 55 种爬行动物及 360 多种鸟类（包括许多猫头鹰）的巩膜骨进行了比较。结果表明，这种古老鸟类的眼睛对光线的开放度较小，使其能够在白天看清东西。

三、单词点津

- 1 **diurnal** [daɪˈɜːnl] *adj.* 白天的；每日的 *n.* 日报，日刊
- 2 **fossil** [ˈfɒsl] *n.* 化石；僵化的事物 *adj.* 化石的；不变的，古老的
- 3 **plateau** [ˈplætəʊ] *n.* 高原；稳定期，停滞期 *v.* 趋于平稳，进入停滞期
- 4 **nocturnal** [nɒkˈtɜːnl] *adj.* (动物) 夜间活动的；夜间发生的
- 5 **symbolize** [ˈsɪmbəlaɪz] *v.* 象征，用符号代表；采用象征，使用符号
- 6 **popularity** [ˌpɒpjʊˈlærəti] *n.* 流行，普及，受欢迎。enjoy great popularity, 享有盛誉
- 7 **vertebrate** [ˈvɜːtɪbrət] *n.* 脊椎动物 *adj.* 脊椎动物(有关)的；有脊椎的
- 8 **paleontology** [ˌpælɪɒnˈtɒlədʒɪ] *n.* 古生物学

- 9 **paleoanthropology** [ˌpeɪlɪəʊ'ænθrə'pɒlədʒɪ] *n.* 古人类学
- 10 **preservation** [ˌprezə'veɪʃn] *n.* 保护, 维护; 保留
- 11 **specimen** ['spesɪmən] *n.* 样品, 标本, 抽样
- 12 **latitude** ['lætɪtju:d] *n.* 纬度; 回旋余地
- 13 **extinct** [ɪk'stɪŋkt] *adj.* 灭绝的, 消亡的
- 14 **comparison** [kəm'pærɪsn] *n.* 比较, 相提并论; 比喻
- 15 **sclera** ['skliərə] *n.* [解剖] 巩膜
- 16 **Miocene** ['maɪəsi:n] *adj.* 第三纪中新世的 *n.* 第三纪中新世。
第三纪 (Tertiary Period) 是新生代的最老的一个纪 (距今 6,500 万年~260 万年)。中新世 (英语: Miocene, 符号: MI) 为地质年代新近纪的第一个时期, 开始于 2,300 万年前到 533 万年前。

四、难句解析

难句 1

A species of diurnal owls was identified from a piece of fossil found on northeastern edge of the Qinghai-Xizang Plateau in China, giving clues on how the diurnal birds evolved in the mostly nocturnal species.

- 1 **found** 是定语, 修饰前面的 fossil。
- 2 **giving clues on...**, 在一个句子中, 如果已经存在一个谓语动词, 而又没有连词, 其他的动词就需要使用非谓语形式。ing 形式表示主动、进行。
- 3 **mostly** 是副词, 修饰 nocturnal。

难句 2

The specimen is close to the northern hawk owl, a medium-sized owl of the northern latitudes, non-migratory and diurnal. The extinct owl belongs to clade Surniini which contains most living diurnal owl species.

- 1 第一句中, a medium-sized owl... 为 the northern hawk owl 的同位语, 另外形容词 (non-migratory and diurnal) 后置, 使句式生动, 也突出了这个物种的特征。
- 2 第二句中 which 引导定语从句。

五、练习题

选择题

- 1 _____ indicates how the diurnal birds evolved in the mostly nocturnal species.
 - A. The Qinghai-Xizang Plateau
 - B. The northeastern edge of the Qinghai-Xizang Plateau
 - C. A diurnal owl's fossil
 - D. Owls that are alive today
- 2 Which of the following reasons is incorrect as to why owls symbolize magic and have a special status in myths?
 - A. Because owls appear in the *Harry Potter* series.
 - B. Because the *Harry Potter* series is popular.
 - C. Because owls are in myths of different cultures.
 - D. Because owls are active during daytime.
- 3 How can we tell the fossil found from the Qinghai-Xizang Plateau is diurnal and not nocturnal?
 - A. Because they are from the northeastern edge of the Qinghai-Xizang Plateau.
 - B. Because they found the fossil.
 - C. Because they are diurnal.
 - D. Because the ancient bird's eyes are less open to light and enable it to see things clear during the day.

问答题

Do your research and answer these questions orally or by writing.

- 1 What kind of information can we get from fossils?
- 2 Why do you think owls are used to deliver letters in *Harry Potter*?

第 3 篇



China's Zhurong rover finds evidence of water on Mars: researchers

(2022.5.12)

Chinese researchers have **detected** water-bearing **minerals** on Mars by analyzing data collected by the country's Zhurong rover that is currently **trekking** on the surface of the Red Planet.

The research team with the Chinese Academy of Sciences' State Key Laboratory of Space Weather and the academy's Center for Excellence in Comparative Planetology led by fellow researcher Liu Yang, made analysis over Zhurong rover's data on **sediments** and minerals of the craft's site and concluded that evidence was found to suggest water persists on Mars.

Their findings have been published in details in the journal *Science* on Wednesday. And it marked a first around the world that water-bearing minerals on Mars have been detected by the short-wave **infrared spectrometer** on a Mars rover.

As part of China's Tianwen-1 Mars probe mission, Zhurong rover landed in a large plain in Mars' northern hemisphere called Utopia **Planitia** on May 15, 2021.

So far, Zhurong have been roving the landing site for a year and trekked nearly 2,000 meters on the Mars **surface**.

一、背景简介

祝融号是天问一号任务火星车。2020 年 7 月 23 日在中国文昌航天发射场由长征五号遥四运载火箭发射升空。2021 年 4 月 24 日，2021 年中国航天日开幕启动仪式在江苏南京举行，中国首辆火星车命名为“祝