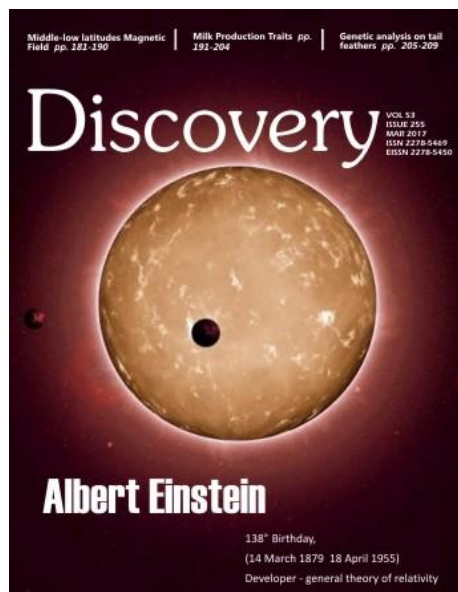


Discovery

About the Cover



CELEBRITY OF THE MONTH

Albert Einstein

138th Birthday, (14 March 1879 – 18 April 1955)

German-born theoretical physicist; Developer - general theory of relativity

Albert Einstein was a German-born theoretical physicist. He is best known for his theory of relativity and specifically mass-energy equivalence, $E = mc^2$. Einstein received the 1921 Nobel Prize in Physics "for his services to Theoretical Physics, and especially for his discovery of the law of the photoelectric effect." Albert Einstein was born in Ulm, Germany on March 14, 1879. As a child, Einstein revealed an extraordinary curiosity for understanding the mysteries of science. In 1905 he obtained his doctor's degree. In 1909 he became Professor Extraordinary at Zurich, in 1911 Professor of Theoretical Physics at Prague, returning to Zurich in the following year to fill a similar post. In 1914 he was appointed Director of the Kaiser Wilhelm Physical Institute and Professor in the University of Berlin. He became a German citizen in 1914 and remained in Berlin until 1933 when he renounced his citizenship for political reasons and immigrated to America to take the position of Professor of Theoretical Physics at Princeton. He became a United States citizen in 1940 and retired from his post in 1945. After World War II, Einstein was a leading figure in the World Government Movement, he was offered the Presidency of the State of Israel, which he declined, and he collaborated with Dr. Chaim Weizmann in establishing the Hebrew University of Jerusalem. Einstein realized the inadequacies of Newtonian mechanics and his special theory of relativity stemmed from an attempt to reconcile the laws of mechanics with the laws of the electromagnetic field. He dealt with classical problems of statistical mechanics and problems in which they were merged with quantum theory: this led to an explanation of the Brownian movement of molecules. He investigated the thermal properties of light with a low radiation density and his observations laid the foundation of the photon theory of light. Albert Einstein received honorary doctorate degrees in science, medicine and philosophy from many European and American universities. During the 1920's he lectured in Europe, America and the Far East, and he was awarded Fellowships or Memberships of all the leading scientific academies throughout the world. He gained numerous awards in recognition of his work, including the Copley Medal of the Royal Society of London in 1925, and the Franklin Medal of the Franklin Institute in 1935. He died on April 18, 1955 at Princeton, New Jersey (Image: <http://images.techtimes.com/>).

Daily, Seasonal and Monthly Variation of Middle-low latitudes Magnetic Field during Low Solar Activity

Binod Adhikari, Rupak Adhikari, Narayan P Chapagain, Nirakar Sapkota, Subodh Dahal, Drabindra Pandit

The variation of horizontal component of the geomagnetic field (Sq-H) is taken in the year 2003 to study the diurnal, monthly as well as seasonal variation of Sq-H using 4 geomagnetic stations across various latitudes and longitudes. We have carried out this work on "Variation of Horizontal Component of Magnetic Field in Low Solar Activity" to understand the variation of solar quiet (Sq) current and its effect on the Earth's surface. The geomagnetic daily variations in the ionosphere are produced by electric currents. We studied the variation of Sq current over the various 4 quietest days of February 2003. Results show that Sq (H) exhibits transient variations with varying amplitude according to seasons and days of the year 2003. The analysis was carried out on solar quiet days using hourly values of horizontal H component of geomagnetic field. The variations of Sq-H are mainly characterized maximum around the daytime (0700–1700 LT) and the minimum around pre-sunrise (0500–0600 LT) and the nighttime (1800–0400 LT). These results show that the Sq-H have consistent minimum values during pre-sunrise hours between 0500 and 0600 LT. The maxima and minima values of Sq-H observed from the pre-sunrise towards the sunrise period may be characterized by counter electrojet.

Discovery, 2017, 53(255), 181-190

Use of Test Day Milk Yield by Random Regression Models for Milk Production Traits in Iranian Dairy Cows

Saber Khodaie Ashan

In this study 203498 test day milk records and 184429 test day fat records of first lactation Holsteins from Iran farms, calving between 2002 and 2009, were analyzed using random regression model. RR/CF models were studied in the respect of different orders of fit for fixed and random regression and also different ways of assuming residual variance in the analysis, including the assumption of constant (homogenous) residual variance and different assumptions about variable (heterogenous) residual variance during lactation. Heterogeneous residual variance considered during days in milk and evaluation of models was based on eigenvalues and associated eigenvectors and residual variance. The heritability estimates obtained by RRM1 (0.34 to 0.56) were higher than those obtained by RRM2 (0.15 to 0.31). Due to the high heritability estimates for milk yield throughout lactation and the negative genetic correlation between test-day yields during different lactation periods, the RRM1 model did not fit the data. Overall, genetic correlations between individual test days tended to decrease at the extremes of the lactation trajectory, showing values close to unity for adjacent test days. The inclusion of random regression coefficients to describe permanent environmental effects led to a more precise estimation of genetic and non-genetic effects that influence milk yield.

Discovery, 2017, 53(255), 191-204

ANALYSIS

Genetic analysis on tail feathers in Indian fantail pigeon

Ashraful Kabir M

Out of 50 squabs with 20 parents of White Indian Fantail fancy pigeons the tail feathers were counted the lowest 23 and highest 34 and this phenomenon is controlled by multiple allele. Within 50 squabs 10 individuals carried 32 tail feathers (20%) and the lowest 23, 24, 27, 33 and 35 (2%). Within the 10 experimental pairs of fantails only two cases 26x32 and 34x36 were different but others were the same tail feathers of male and female are 36, 32, 31, 34 and 26. Out of 10 pairs result suggests the equal and below tail feather than parents individuals were 3 (30%) (34x36, 31x31, 34x34), equal and above parents 1 (10%) (26x26), below male and above female 3 (30%) (32x32, 32x32, 31x31), below parents 8 (80%) (36x36, 32x32, 32x32, 34x36, 31x31, 31x31, 34x34, 26x26) and equal and above female only 1 (10%) (26x26). Concluding remark need to point out more research on DNA analyses of 32x32 and 26x26 tail feathers of parents why the feathers are drastically decreased within the squabs.

Discovery, 2017, 53(255), 205-209

PERSPECTIVE

The Effectiveness of Class-Based Learning in Non-Formal Education Packet B

Nyoman Sueca

Participants of Secondary Education Equivalence Program which is known as *Kejar Paket B* Program come from a variety of backgrounds in Cakranegara District, as most dropouts leave school until junior high. They then migrate to other regions as laborers, even the children, who drop out of school, are going to Malaysia to become migrant workers, early marriage and others. For that, they follow Secondary Education Equivalence Program or *Kejar Paket B* program as a shortcut to obtain certificates and public recognition. Based on the issues discussed in this article is regarding the form of class-based learning, problematic and problem solving as well as the effectiveness of Equality Education Learning of Packets B Program. Of the three issues, the authors found that this type of learning is very important to help the government in an effort to improve public education, especially for those who drop out of school because of school fee issues.

Discovery, 2017, 53(255), 210-216

The Phenomenon of Religion Conversion in Praya, Central Lombok, West Nusa Tenggara

I Nyoman Murba Widana

Religion conversion often occurs in pluralistic countries such as Indonesia. It can be seen in Praya, Central Lombok, many of them did conversion because of several reasons. They converted to Islam because of marriage, attempts positions, solicitation, and economic reasons. The most powerful reason the conversion is about marriage, where the men were Hindu when mating with the female Muslim, will convert to Islam. Here, the husband who follow the religion of the wife. Of the people who have switched religion, there are some negative effects happened, such as family relationships become distant, the communications space is very limited, and some other things that if left untreated will have an impact socially.

Discovery, 2017, 53(255), 217-223
