More than 300 scientists took part in the conference. At the opening of the conference, Academician Yu.G. Leonov, chairman of the Interagency Tectonic Committee, noted that the conference was being held during the International Polar Year, and that this was reflected in the program of conference. D.Yu. Pushcharovsky, corresponding member of the RAS and dean of the Faculty of Geology, MSU, delivered a welcoming speech. He pointed out two memorable dates of 2008: the 60-year anniversary of the first Tectonic Conference and the 100th anniversary of M.V. Muratov, Corresponding Member of the Academy of Sciences of the USSR and the first chairman of the Interagency Tectonic Committee. Academician Yu.M. Pushcharovsky, honorary chairman of the committee, devoted his brief statement to the International Year of Planet Earth (2007–2009) and emphasized that the Tectonic Conference is a significant action in the framework of this project.

According to the program of the conference, about 60 contributions were presented at three plenary and five section sessions, and more than 30 poster presentations were displayed.

V.D. Kotelkin and L.I. Lobkovsky supplemented their model of mantle convection by taking into account the growth and cooling of the Earth’s core, as well as the formation and growth of the crust. These additions opened a way toward a simplified modeling of the evolution of the planet as a whole. The core is assumed to be quasistationary. The crust is represented as a set of dotty particles that drift on the outer surface. Heat release caused by radioactive decay diminishes exponentially. A 3D simulation of the Earth’s evolution was carried out in Cartesian coordinates. The numerical result of the modeling is consistent with the Wilson, Bertrand, and Stille cycles. The endothermic phase transition at a depth of 670 km exerts an inhibitory effect on convection. New experimental data have shown that this effect decreases in the presence of water. Taking these results into account, the 2D slope of the phase curve $\gamma = -1.4$ MPa/degree was investigated. It was established that mantle overturns are possible in this case as well.

M.M. Buslov, I. de Grave, and D. Koch showed in their lecture entitled “Tectonics and Geodynamics of the Late Mesozoic Orogens in Asia” that accretion and the subsequent collision of the North China continent and the Kolyma–Omolon microcontinent with Eurasia resulted in the formation of extensive Late Mesozoic orogen at its eastern margin and in Central Asia. This process had much in common with the formation of the Cenozoic Alpine–Himalayan–Central Asian orogenic belt.

The evolution of the Central Andean Orogen was discussed by M.G. Lomize in the light of up-to-date geophysical data and seismological and geodetic information on recent movements and deformations. The rate and direction of subduction, absolute motion of the continental block, variation in age of the slab, and subduction of inhomogeneities in the oceanic crust played crucial roles in the formation of this grandiose orogen, which is comparable in scale with the Himalaya–Tibet collisional orogen.

V.V. Yarmolyuk, V.I. Kovalenko, D.V. Kovalenko and A.M. Kozlovsky called attention to the Permian–Early Triassic intraplate magmatism of Asia and demonstrated a number of large igneous provinces that arose in Asia ~250 Ma ago. As follows from the presented paleogeographic reconstructions, these provinces are localized in the eastern sector of Pangea. Taking into account the absence of intraplate magmatic activity in other continental regions of the Earth, it was concluded that at that time the Asian sector of Pangea was located above a hot mantle field.
The Triassic geodynamics of the South Urals was considered by A.L. Tevelev, I.A. Koshelev, M.A. Furina, and B.V. Belyatsky in terms of new isotopic data. The authors obtained the first reliable evidence for the occurrence of Mesozoic granites in the South Urals. The Middle Triassic Rb–Sr age (237–238 Ma) was established for the granite porphyry of the Kisinet intrusive complex in the East Ural Megazon and the alkali granite of the Malochekinsky Complex in the eastern Magnitogorsk Zone. The formation of these rocks was related to the transition from the extensional geodynamic setting to transpression. The change of geodynamic setting led to the cessation of volcanism in the Chelyabinsk Rift, its transformation into a ramp, and the substantial fluid reworking and heating of the crust with formation of crustal magma sources localized at various depths. The model Nd age of the source material involved in melting corresponds to the Neoproterozoic.

Fundamentally new data on the structure of sedimentary cover of the West Siberian Plate were presented by G.N. Gogonenkov, M.A. Goncharov, N.V. Koronovsky, A.I. Timurziev, and N.S. Frolova on the basis of interpretation of the results of a 3D seismic survey. An unusual structural assembly appears in plan view as linear systems of echelon-arranged normal faults related to the strike-slip faults in the basement. In the different walls of these faults, the planes of normal faults dip in opposite directions, resembling propeller blades. In the vertical section parallel to the strike-slip fault, the bedding planes and the planes of the normal faults dip in opposite directions as well. Such a structural assembly could have been formed as a result of interfering stress fields of vertical and horizontal shears. The general near-meridional compression of the West Siberian Plate was the main cause of strike-slip offsets. The conclusions drawn in this work are very important for understanding the mechanism responsible for the formation of petroliferous structural elements of the propeller type.

K.Zh. Seminsky and E.I. Kogut carried out a relatively simple physical experiment which simulated the Baikal Rift Zone with a left-lateral strike-slip plate boundary complicated by a pull-apart basin the center. The authors achieved a high degree of similarity of experimental results with the morphology and evolution of the Baikal Rift Zone. It was shown that the mechanism of passive rifting explains the main spatiotemporal features of rift formation, including the consecutive and nonuniform evolution, the general structural zoning, the morphology of large basins, and the specific fracture pattern. According to the experimental data, the evolution of the Baikal Rift Zone is determined by the following main factors: (1) elastoplastic reaction of the basement, (2) left-lateral offset, and (3) occurrence of an initiating structural heterogeneity curved in plan view. Other factors (rheological delamination of the lithosphere, difference in the rheology of contacting plates, the fracture network, the state of transtension and transpression, the instability of the main energy source, and external impacts) determine the auxiliary features of rifting in the Baikal region.

New geological, geochronological (U–Pb method on zircon) and Nd isotopic geochemical data allowed I.K. Kozakov, V.V. Yarmolyuk, V.P. Kovach, and E.B. Sal’nikova to suggest the geodynamic setting responsible for the formation of crystalline rocks in the Early Caledonian superrupture and linear Hercynian belts of Central Asia. The Late Vendian metamorphic belt arose in the Early Caledonian superrupture by 570–560 Ma ago. Metamorphism of elevated pressure indicates that thick continental blocks were formed in the Vendian. The Late Baikalian stage of the evolution of the Early Caledonian superrupture of Central Asia (570–560 Ma) predated the formation of its structure and the repeated regional metamorphism of the kyanite–sillimanite facies series in the Late Cambrian and Early Ordovician (510–490 Ma). The development of the Hercynian and Late Hercynian was accompanied by the formation of the South Altai and South Gobi metamorphic belts 390–360 and 220–240 Ma in age, respectively.

V.S. Imaev, L.P. Imaeva, O.P. Smekalin, and B.M. Koz’mint is presented data on the evolution of neotectonic structural elements, including seismoactive faults, along the southern and eastern boundaries of the Siberian Platform. It was shown that these structural elements inherit collisional zones and make up linear orogenic belts with certain systems of seismoactive faults. Particular segments of the lithospheric plate boundaries are characterized by specific kinematic types of active faults. For example, the near-latitudinal left-lateral strike-slip and reverse–strike-slip faults and related thrust faults typical of the Sayan–Baikal–Stano-voi seismic belt give way to extension structural features in the Baikal Rift Zone, which is distinguished by the development of normal and normal–strike-slip faults. Farther eastward, in the Olekma–Stanovoi seismic zone, large left-lateral strike-slip faults and parallel near-latitudinal thrust faults are traced. The Chersky seismic belt that marks the boundary between the Eurasian and North American plates is accompanied by normal faulting in the regime of extension. The neotectonic and seismoactive structural elements in Altai are formed under special conditions of the near-meridional transpressional boundary with a predominance of right-lateral strike-slip faults.

V.E. Pavlov and A.S. Karetnikov defined a new Mesozoic paleomagnetic pole of the Siberian Platform. This pole practically coincides with the European curve of the apparent pole migration. This is a strong argument for regarding this curve as a reference one for the Mesozoic and Cenozoic of the Siberian Platform. This implies that at least since the end of the Jurassic, the Siberian Platform and Stable Europe did not undergo relative displacements on a scale that can be recorded by paleomagnetic method. The results obtained confirm the idea of the rigid North Eurasian Plate existing in the Mesozoic and Cenozoic.