NUCLEAR TRACKS OF VH-GROUP SOLAR COSMIC RAYS IN
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The wide nuclear track studies in recent 10-15 years
and data obtained for the meteoritic and lunar silicate
minerals were used to argue, that these materials were freely
exposed in interplanetary space by the low-energy nuc-
lei of VH-group (iron group) of the solar cosmic rays (SCR).
With the aim of further elucidate SCR-irradiation
conditions at the pre-accretion stage of the meteorite for-
mation and track conservation during overall subsequent
history of the meteorite natural occurrence a systematic
nuclear track search for ordinary chondrites was made.
It was investigated 10 ordinary chondrite samples represent-
ing varies chemical groups and petrological types: Ties-
chitz H3, Ochansk H4, Pribram H5, Doroninsk H6, Tugalin Bulen
H6, Saratov L4, Elenovka L5, Krymka LL3, Soko-Banja LL4, Vavi-
lovka LL6. The olivine 20-200 μm grain size was used for
chemical etching and track density (Q) measuring with help of
optical microscope. Only the grains for which Q>10⁷ track/cm²
and/or track density gradient from edge to centre of
a crystal was observed, were referred by us to micro-objects
with the trace of pre-accretion exposure. The track density
distribution of the olivine grains for each meteorite un-
der investigation are shown in Figure.

It will be noted the next characteristics: a) The lowest values Q were obtained for Saratov: none of 141 gra-
ins under investigation detected Q>5×10⁶ track/cm²; b) For
Ochansk, Doroninsk and Saratov the fraction of grains with
Q>10⁷ track/cm² is smaller than 10%, but for Tieschitz and
Vavilovka this fraction exceeds 70%; c) Almost the whole am-
ount of the grains for Tugalin Bulen detected Q in the in-
terval ~ (1-10)×10⁶ track/cm²; more wide interval Q~ (10⁵-
10⁷) track/cm² was detected for Tieschitz; for all other chon-
drites under investigation Q varied from ~10⁴ to ~10⁷
track/cm²; d) All but Saratov meteorite have the grains
with Q>10⁷ track/cm² the portion of this grains is 1-10%.
For Tieschitz, Doroninsk, Krymka, Saratov, Soko-Banja and Va-
vilovka was observed the grains with the track density gra-
dient: the portion of this grains not exceed 1-2%. It will be
noted that only Krymka chondrite contains a solar rare
 gases [4].
Thus for the first time for the ordinary chondrites,
which not contain the rare gases of solar composition, was
discovered SCR VH-group nuclear track records from the pre-
accretion low-energy irradiation of the initial individual
grains of these meteorites.

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Fig. The track density distribution of the olivine
grains for ordinary chondrites,N-number of the crystals
under investigation, N-relative number of crystals acco-
unting for given interval of the track density (ρ).