THE MAGNETOSPHERE OF VENUS. Sh.Sh. Dolginov, L.N. Zhuzgov
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The cavity on the night side of Venus is the magnetosphere,
where the density of magnetic energy exceeds that one in solar
wind and the regularity of magnetospheric field differs from
that one in magnetosheath.

The topology of magnetosphere at the planetocentric dis-
tances of 2.5+5 Rv on night side is characterized by stretching
in solar direction, by two lobes of magnetic lines of force
directed "from Sun" and "towards Sun" which are divided by the
layer, where the density of magnetic energy has extreme minimum
that is analogical with the region of neutral sheet in the
Earth's magnetosphere.

The defect of density of the magnetic energy in that region
should be compensated by the plasma pressure and it should be
suggested the existence of plasma sheet.

The magnetic lines of force in studied region are likely
closed but the main part of magnetic energy is concentrated in
solar or antisolar component of magnetic field.

Northwards from the ecliptic plane the field in magnetic
tail is directed mainly "from Sun". This fact is obtained by
measurements at the planetocentric distances of 2.0+5.0 Rv and
under opposite signs of solar component of interplanetary mag-
netic field.

Southwards from the ecliptic plane the field is directed
mainly "towards Sun". It is obtained by measurements at the
height of 1500+3500 km under opposite signs of solar component
of interplanetary magnetic field.

At the height of 1500+2500 km where the measurements were
done southwards from ecliptic plane the field topology is
complicated. The distinct dependence on value and sign of solar
component of interplanetary magnetic field is revealed
particularly when the letter one is of significant value
(10-15 gammas) and is directed "from Sun". In such a case at
low heights the maximum level of solar component is 10+20 gammas
and its sign is coincided with the interplanetary field.
The field in tail decreases rather rapidly versus the distance
and the magnetogram reveals the field directed "towards Sun".
The scalar value of magnetic field has the minimum in that re-
gion. The reverse of field sign does not controlled by the
noon-midnight meridiane plane although there are cases when
sign reverses are observed near the noon-midnight meridiane.

The totality of data could be explained more naturally by
the existence of intrinsic dipole magnetic field of planet with
north pole located in north hemisphere. The dipole magnetic
moment could be estimated as 3+5 10^{22} G cm^3.

The topology of magnetic field at the low heights could
be explained by superposition of the intrinsic field and of the external fields connected directly with the flowing of the planet by the interplanetary magnetic field and possibly of the induction fields generated by the solar wind within the planetary ionosphere.

The significant level of the interplanetary field at the Venusian orbit could effect on the tail topology as well at the high distances.

The possibility of the explanation of such topology at the planetocentric distances at least up to 2.5 $R_v$ by means of unipolar induction mechanism is discussed.