



Red Spot has been observed for more than 300 years) is largely related to the fact that temperatures are so low on the planet that very little energy is lost by these systems.

A large number of gases and compounds are known to exist in the atmosphere and these are listed in Table 5-12.

The outermost region consists of a hydrogen haze, below which are the visible cloud-tops of ammonia cirrus.

Even deeper it is generally agreed that the clouds are formed of ammonium hydrosulphide crystals ( $\text{NH}_4\text{SH}$ ), even though this cannot be observed directly, at a likely temperature of 260 K. Further down there are layers of water ice and water droplets. (See Fig. 5-16.)

Table 5-12 Jupiter: atmospheric composition

known components

hydrogen	$\text{H}_2$	carbon monoxide	$\text{CO}$
helium	$\text{He}$	hydrogen sulphide	$\text{H}_2\text{S}$
methane	$\text{CH}_4$	hydrogen cyanide	$\text{HCN}$
ammonia	$\text{NH}_3$	germanium hydride	$\text{GeH}_4$
water	$\text{H}_2\text{O}$		
ethane	$\text{C}_2\text{H}_6$		
acetylene	$\text{C}_2\text{H}_2$		
phosphine	$\text{PH}_3$		
ammonium			
hydrosulphide			
(probable)	$\text{NH}_4\text{SH}$		

The surface of Io, the innermost of the Galilean satellites, showing the giant volcano Pele (the heart-shaped area). The dark areas are other volcanic craters; the white areas are sulphur dioxide 'snow', while the overall reddish coloration is due to sulphur, ejected in molten form from the volcanoes.