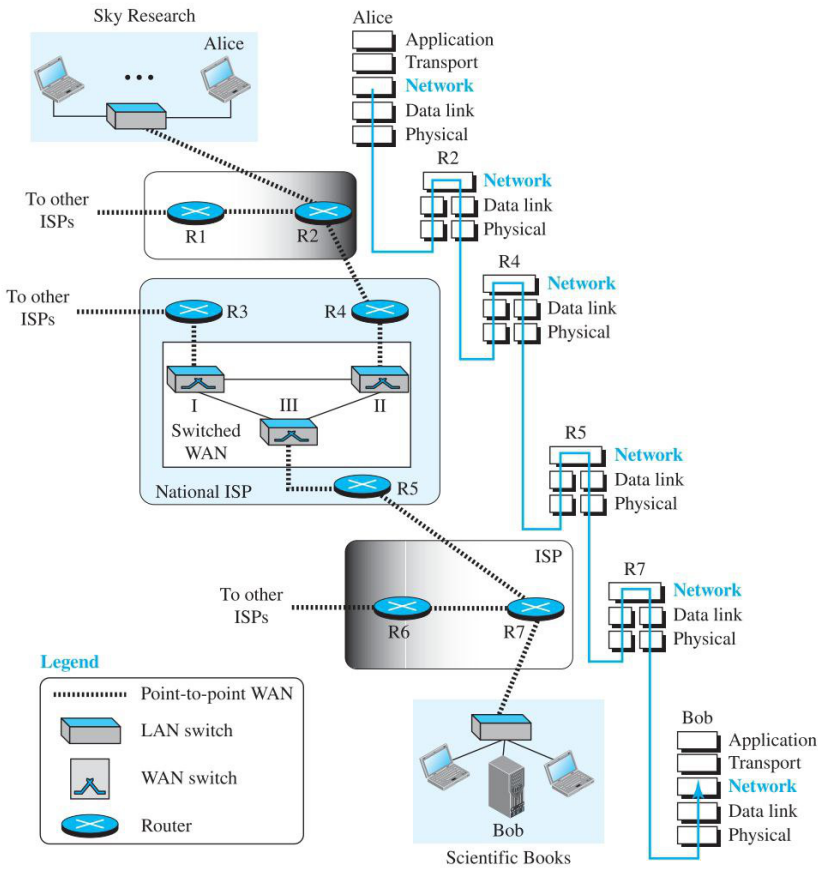
(*) Network Layer: Data Transfer

^ The NETWORK layer in the TCP/IP protocol suite is responsible for the HOST-TO-HOST delivery of PACKETS.

Figure 7.1 *Communication at the network layer*



https://networkengineering.stackexchange.com/questions/56254/how-does-a-tcp-segment-fit-into-a-smaller-ip-packet

https://stackoverflow.com/questions/68713774/how-does-network-layer-knows-if-it-has-to-fragment-the-packet

Transport layer breaks application data into pieces and encapsulates each piece into a segment.

Network layer takes a segment and directly encapsulated into a packet WITHOUT breaking it down.

Fragmentation of a packet may happen.

Max. packet size = 2^16 bytes.

In practice, the packet size is much less, as TCP tries to keep segments small enough so that even after adding the IP headers, the total size doesn't need fragmentation.

UDP doesn't care.