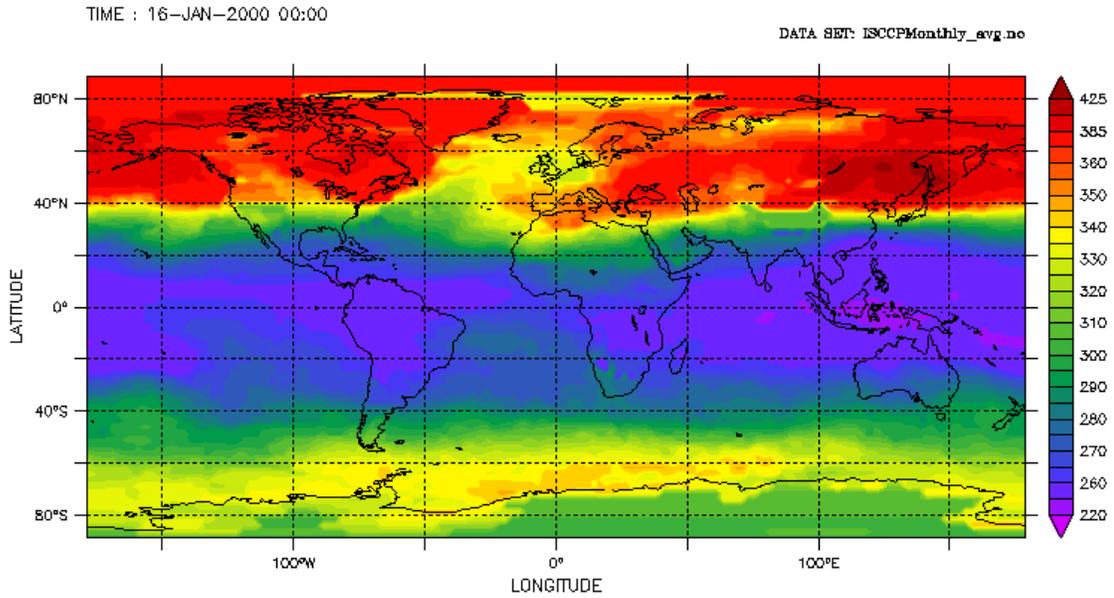


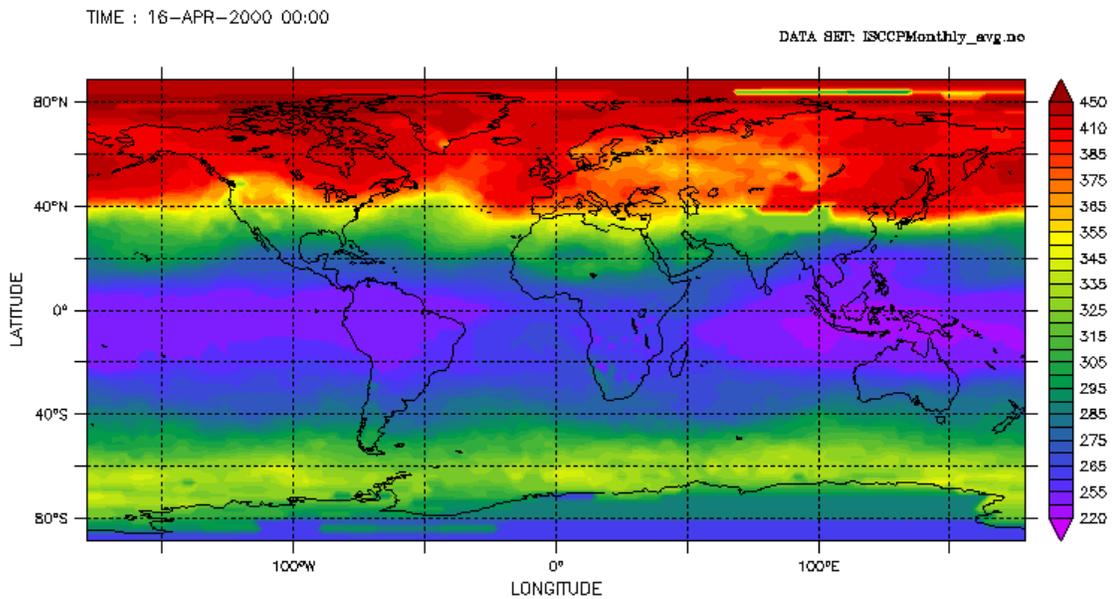
Lesson 36: Identifying Ozone Variations over Different Locations

LAS 7.+ / Ferret 6.1 NOAA/PMEL



Monthly Total Column Ozone (ISCCP) (dobson)

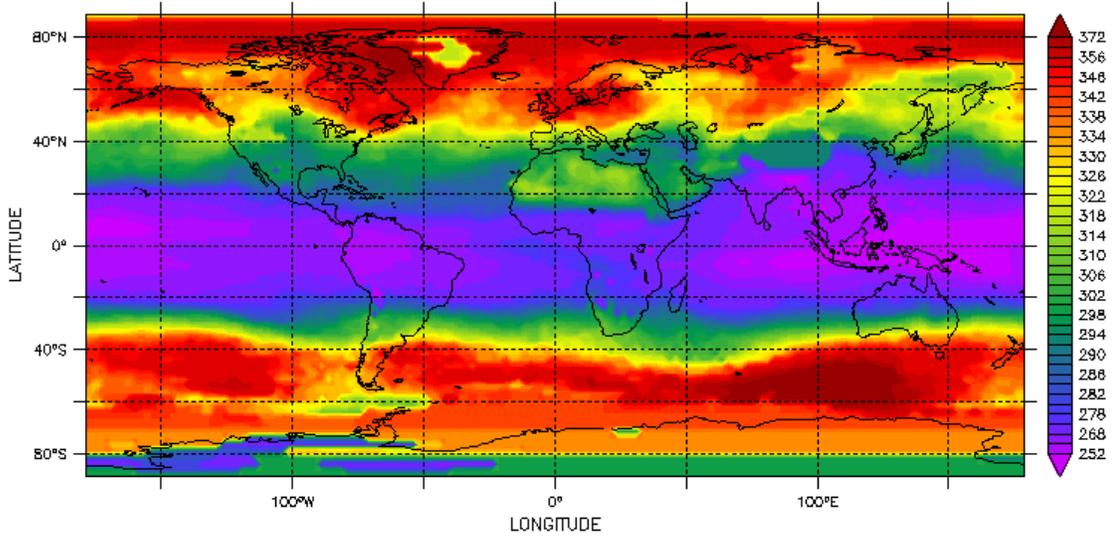
LAS 7.+ / Ferret 6.1 NOAA/PMEL



Monthly Total Column Ozone (ISCCP) (dobson)

TIME : 16-JUL-2000 00:00

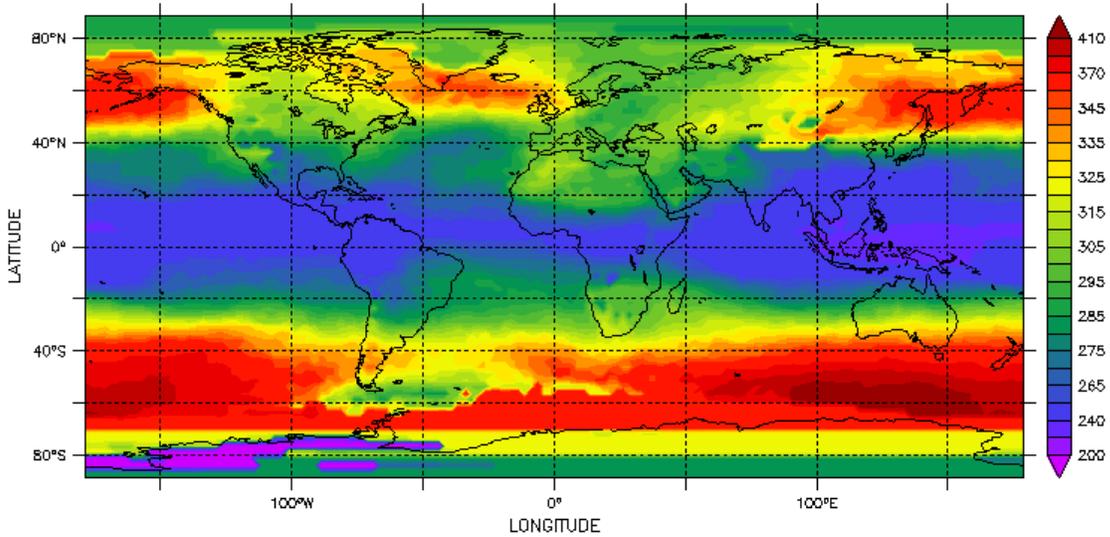
DATA SET: ISCCPMonthly_avg.no



Monthly Total Column Ozone (ISCCP) (dobson)

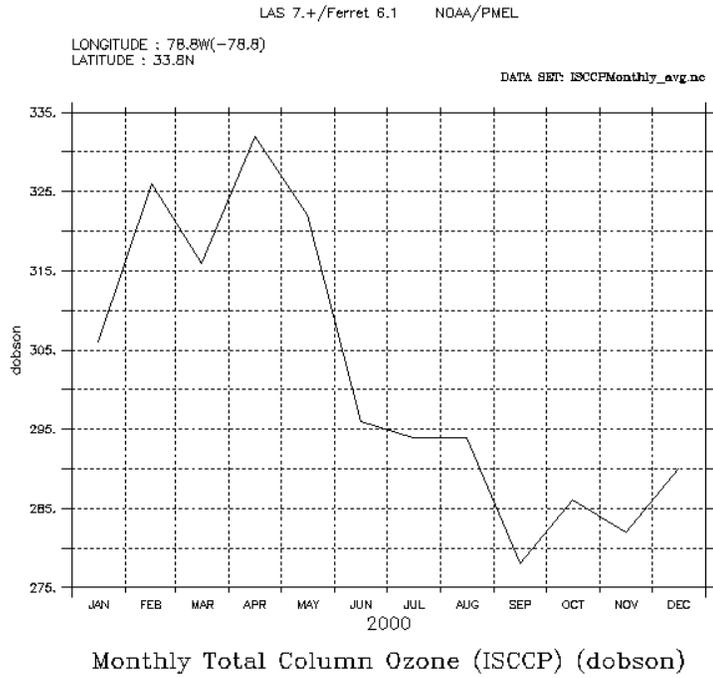
TIME : 16-OCT-2000 00:00

DATA SET: ISCCPMonthly_avg.no

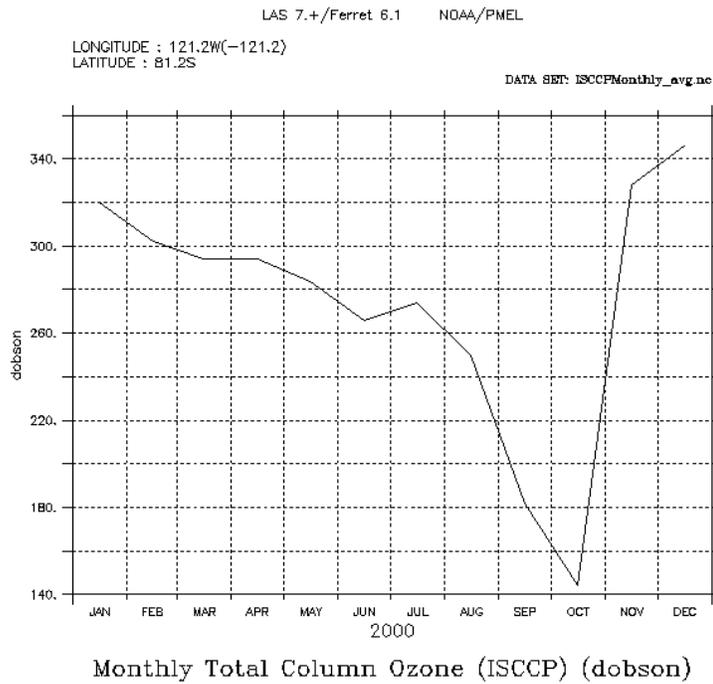


Monthly Total Column Ozone (ISCCP) (dobson)

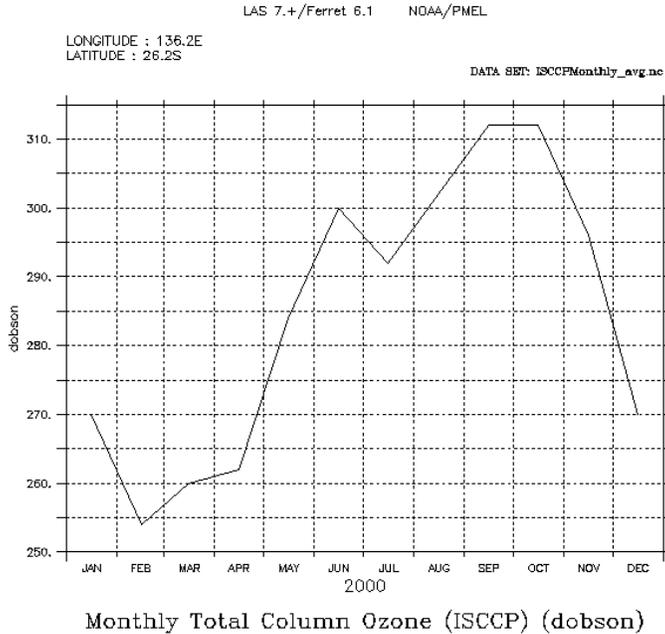
North America:



Antarctica:



Australia



Questions:

1. During what season (i.e. Spring, Autumn, Winter, or Summer) do the highest values of ozone occur over your site?

Students should use the line graph and find the maximum points of the total column ozone and from that discover what season the highest ozone values occur over your site. In Australia, the highest values are in the fall months, from August to November. In Antarctica, the highest values are the winter months, November to February. And in the United States, the highest values are from March to May, in the Spring.

2. When do the lowest ozone values occur over your site? Why do you think ozone decreases?

Students should use a similar process to identify the minimum and lowest values on their line graphs. In Australia, the lowest ozone values occur in the winter months, January to March. In Antarctica, the lowest values are from August to the end of October. And in the United States, the lowest values occur from September to November.

3. For which location does the ozone hole exist? (ozone hole is 220 DU or less)

Students can look at the numbers on their line charts and also look at their color plots, taking care to look at the DU values on each plot. They can tell that there is clearly an ozone hole over Antarctica.

4. How long does the ozone hole last?

Judging by the line graphs, the ozone hole seems to last about two months of the year.

5. When are ozone values normally the highest over the Southern Hemisphere?

Students can look at their color plots and should gather that ozone levels are the highest during the summer months, specifically in July.

6. When are ozone values normally the highest over the Northern Hemisphere?

The Northern Hemisphere has higher values in April and the spring months. Students need to be careful and read the individual legends on the color plots, because each color does not always mean the same ozone value on different charts.

Extensions:

1. Write a paragraph and create graphs to support or deny the following statement: The ozone hole comes over Australia for at least one month every year.

Students should use charts and graphs to back up their data. Judging by both the line chart and the color plot above, students can see that although the ozone hole does not come over Australia every year, sometimes the hole can get very close to the continent.

2. As a class, have groups compile their plots or images in PowerPoint to present to the class, as they will be looking at a variety of places around the world. Working in groups will help with time management.