

HOMEWORK ASSIGNMENT # 3

Due: Tuesday, 29 January

The following questions require some searching on the web or in the library to find specific papers in the astrophysical literature. The best way to do this is to use the NASA/ADS web page (<http://adswww.harvard.edu/>), and set it for abstracts in astronomy and astrophysics.

You might also consider looking at a specific web page for astrochemistry:
<http://astrochemistry.net/>

The idea is to look up particular astronomical sources and determine what is known about their structure, physical conditions, and molecular content. Do not expect to understand everything that is in the papers you look at. Choose a source from the list below, and write perhaps 2 pages on it. It would be nice if you could write your assignment on a computer, so that I could read your English better. It is fine if you help each other in your research.

Here are the sources:

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| L134N (aka L183) | a dense cold core similar to TMC-1, but now showing some signs of possessing a central dense condensation |
| L1544 | the best studied pre-stellar core |
| Sagittarius B2 | a complex multi-faceted source near the galactic center |
| Orion Compact Ridge | a well-studied hot molecular core |
| IRAS 16293 2422 | a well-studied proto-stellar source with a hot corino |
| Elias 16 | the best studied source for grain mantles (located in the Taurus cloud) |
| IRC+10216 | an old star with a molecule-rich outer envelope |
| Orion Bar | near the famous HII region; a PDR that contains the PAH IR emission features |
| DM Tau | a protoplanetary disk in the Taurus region |