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## Question 1: Trash to Fuel; Question 2: Planes from Cans

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# And the Survey Says ...

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## Astronomy in Two-Year Colleges

We have been looking at physics enrollments in two-year colleges (TYCs); we now turn our focus to astronomy. In 2011, we estimate that 71% of TYCs that offered physics courses also offered astronomy courses. It is possible that there are TYCs that offer astronomy that do not offer physics; data for these schools are not included in our estimates. We estimate that 51,000 students took an astronomy course at a TYC in 2011. We also have data on enrollments in astronomy courses taught by degree-granting physics departments and by departments that offer a degree in astronomy—including both stand-alone astronomy departments and those that offer degrees in both physics and astronomy. The number of students taking astronomy courses at TYCs is equivalent to that in departments that grant at least a bachelor's degree in astronomy.

Next month, we will shift our focus to the representation of women among the faculty in degree-granting physics departments. If you have any questions or comments, please contact Susan White at the Statistical Research Center of the American Institute of Physics ([swhite@aip.org](mailto:swhite@aip.org)).

**Enrollments in Introductory Astronomy Courses  
in TYCs and departments offering at least bachelor's degrees**

Institution/Department	Year	Introductory Astronomy Enrollments
TYCs	2011	51,000
Physics degree-granting	2010	144,000
Astronomy degree-granting	2010	52,000

NOTE: The data for the astronomy degree-granting departments include departments that offer degrees in both physics and astronomy.

[www.aip.org/statistics](http://www.aip.org/statistics)

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# Fermi Questions

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## ► Question 1: Trash to fuel

In the movie “Back to the Future,” the protagonists fuel their “car” with trash. If our cars could burn trash, what fraction of our transportation fuel needs could be supplied? (Thanks to Prof. Hyde’s “Physics on the Back of an Envelope” class at Old Dominion University for the question.)

## ► Question 2: Planes from cans

We consume and presumably recycle many cans of soda, juice, and beer on a typical commercial airplane flight. How many flights would it take to collect enough soda cans to build a new airplane?

Look for the answers online at [tpt.aapt.org](http://tpt.aapt.org). Question suggestions are always welcome! For more Fermi questions and answers, see the now available *Guesstimation 2.0: Solving Today's Problems on the Back of a Napkin*, by Lawrence Weinstein (Princeton University Press, 2012).

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