

Astronomy Enrollments and Degrees

Results from the 2008 Survey of Physics & Astronomy Enrollments and Degrees

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REPORTS ON ENROLLMENTS AND DEGREES

R-151.45

**Astronomy Enrollments
and Degrees (July 2010)**

Physics Enrollments
(forthcoming)

Physics Undergraduate
Degrees
(forthcoming)

Physics Graduate Degrees
(forthcoming)

*The number of women
receiving a bachelor's in
astronomy has
remained at about 110 –
140 for the last 6 years.*

THE 2008 SURVEY OF ENROLLMENTS AND DEGREES

Each year, degree-granting astronomy departments are contacted in the fall and asked to provide their departmental counts of degrees conferred.

Astronomy Bachelor's Degrees

In 2008, 327 astronomy bachelor's were awarded, with 116 of them earned by women. The number of bachelor's granted in astronomy continues to remain steady at under 350 degrees a year.

Figure 1

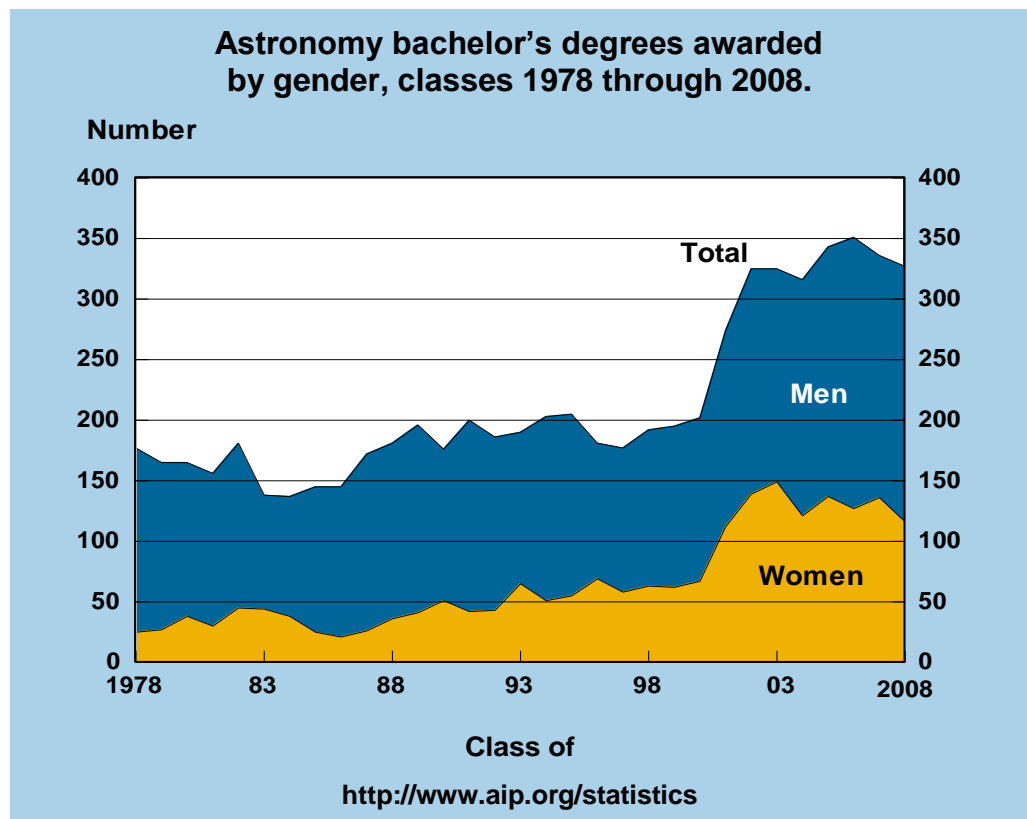


Table 1**Departments averaging seven or more astronomy bachelor's degrees per year, classes 2006 through 2008.**

| | Annual average | | Annual average |
|------------------------------|----------------|------------------------|----------------|
| U of California, Berkeley | 24 | Boston U (MA) | 9 |
| U of Colorado, Boulder | 21 | Pennsylvania State U | 9 |
| Florida Inst of Technology | 17 | U of Mass, Amherst | 9 |
| U of California, Los Angeles | 14 | U of Texas, Austin | 9 |
| Michigan State U | 12 | Columbia U (NY) | 8 |
| U of Washington | 12 | U of Minn, Minneapolis | 7 |
| U of Arizona | 11 | U of Rochester (NY) | 7 |
| U of Hawaii, Hilo | 11 | U of Virginia | 7 |
| U of Wisconsin, Madison | 11 | | |

<http://www.aip.org/statistics>

The four biggest producers of astronomy bachelor's were responsible for producing 25% of the bachelor's over the last 3 years.

Table 1 lists the astronomy departments that averaged seven or more astronomy bachelor's per year. These departments were responsible for producing 54% of the astronomy bachelor's conferred in 2008. The national average for all astronomy departments is 4.5 bachelor's degrees per year.

Table 2**Number of departments that offer astronomy degrees, academic year 2007-08.**

| Highest astronomy degree offered | Combined with physics | Separate astronomy | Total |
|----------------------------------|-----------------------|--------------------|-----------|
| PhD-granting | 10 | 29 | 39 |
| Master's-granting | 1 | 2 | 3 |
| Bachelor's-granting | 26 | 7 | 33 |
| Total | 37 | 38 | 75 |

<http://www.aip.org/statistics>

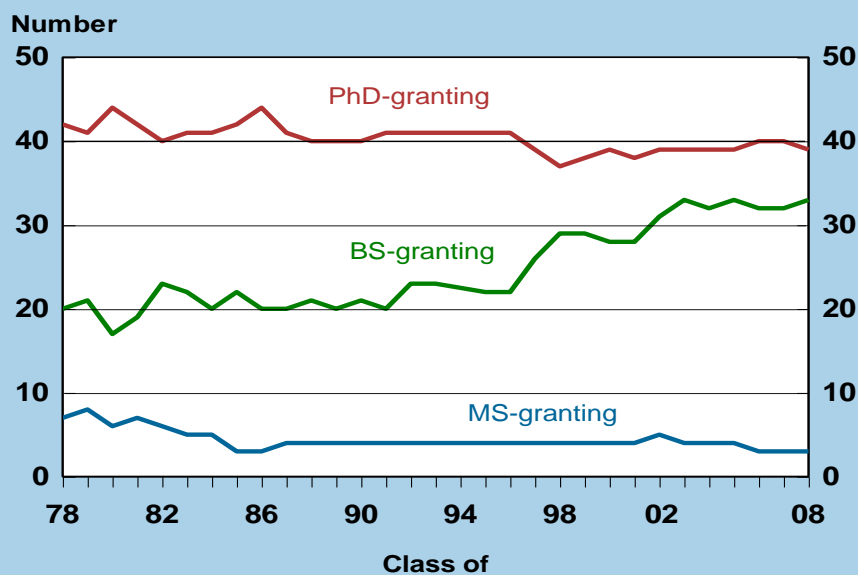
Eight of the 39 PhD-granting departments do not offer an undergraduate astronomy degree.

Of the 75 departments that offer astronomy degrees in the U.S., 37 are combined with a physics department and offer both physics and astronomy degrees. The rest (38) are stand-alone astronomy departments that offer only astronomy degrees.

The number of departments that grant astronomy graduate degrees in the U.S. has remained stable over the last few decades.

Figure 2

Number of departments offering an astronomy degree by highest astronomy degree offered, classes 1978 through 2008.



<http://www.aip.org/statistics>

The number of bachelor's-granting departments has seen some growth over the years, increasing by about 10 departments since the mid-1990s.

Introductory astronomy enrollments have remained in the 180,000 - 190,000 range since 2004. The majority of introductory astronomy enrollments are at departments of physics that do not offer astronomy degrees.

Table 3

Introductory astronomy course enrollments by type of department, academic year 2007-08.

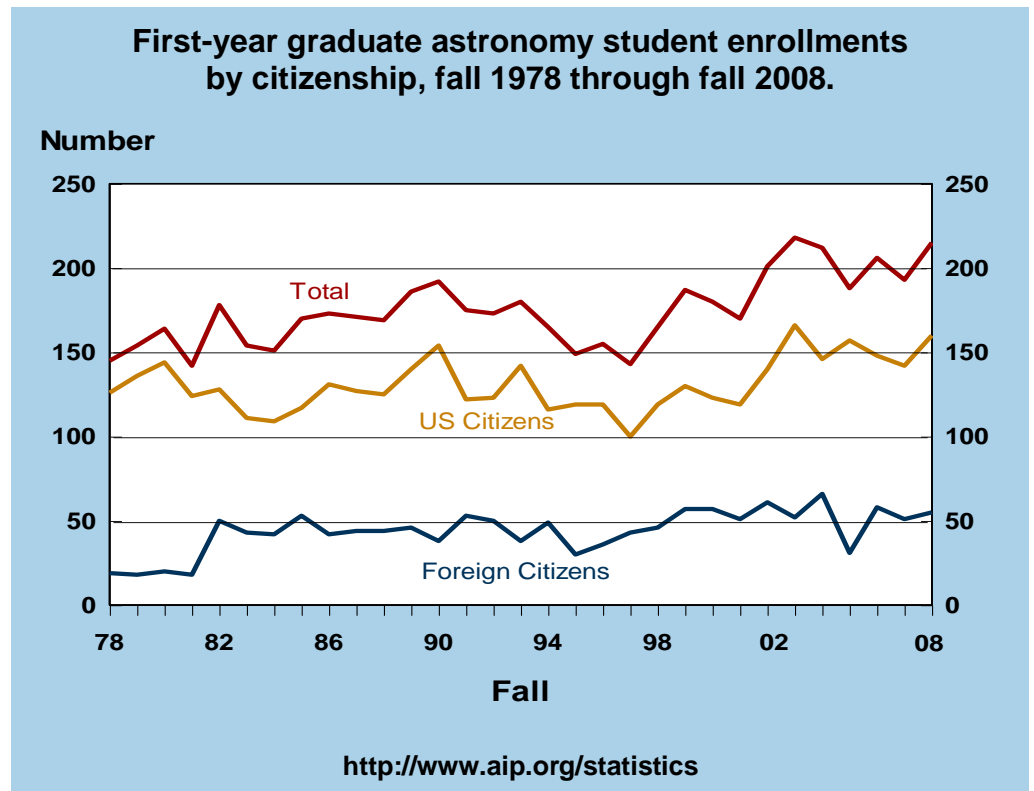
| Highest degree offered | Depts. offering physics degrees only | Depts. offering astronomy degrees |
|------------------------|--------------------------------------|-----------------------------------|
| Bachelor's | 58,000 | 8,000 |
| Master's | 24,000 | 2,000 |
| PhD | 56,000 | 38,000 |
| Total | 138,000 | 48,000 |

<http://www.aip.org/statistics>

About 75% of the students who take an introductory astronomy course do so at a physics department that does not offer astronomy degrees.

Astronomy First-Year Graduate Student Enrollments

Figure 3



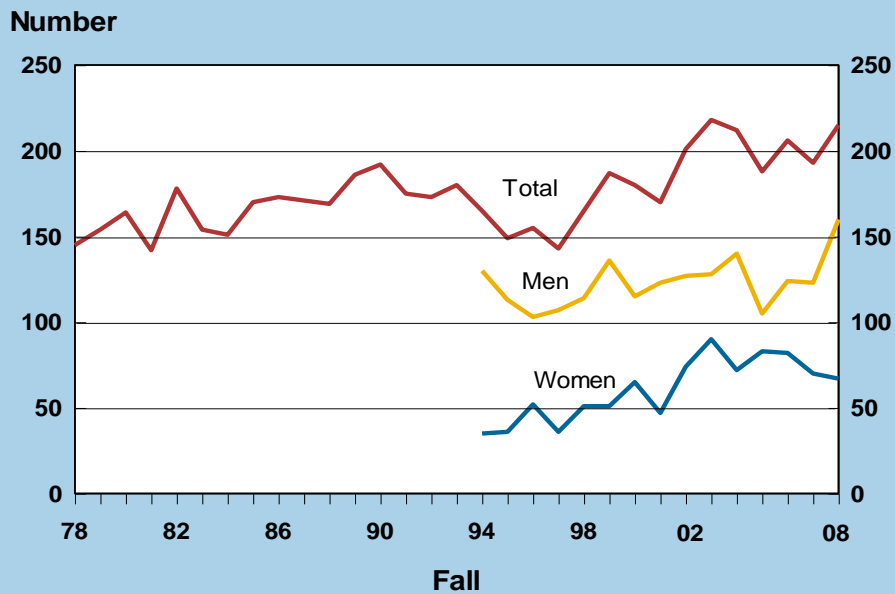
First-year graduate enrollments in astronomy are on the rise.

Figures 3 and 4 look at first-year graduate students in astronomy, one by citizenship and the other by gender. Foreign citizens make up about one quarter of first-year astronomy enrollments in the class of 2008. This is less than the proportion that enroll in physics departments, where they make up 42% of students entering graduate study.

First-year astronomy enrollments leveled off at about 200 in recent years. In the last 3 years the number of men entering graduate study increased by 50 whereas the number of women has declined somewhat.

Figure 4

First-year graduate astronomy student enrollments by gender, fall 1978 through fall 2008.

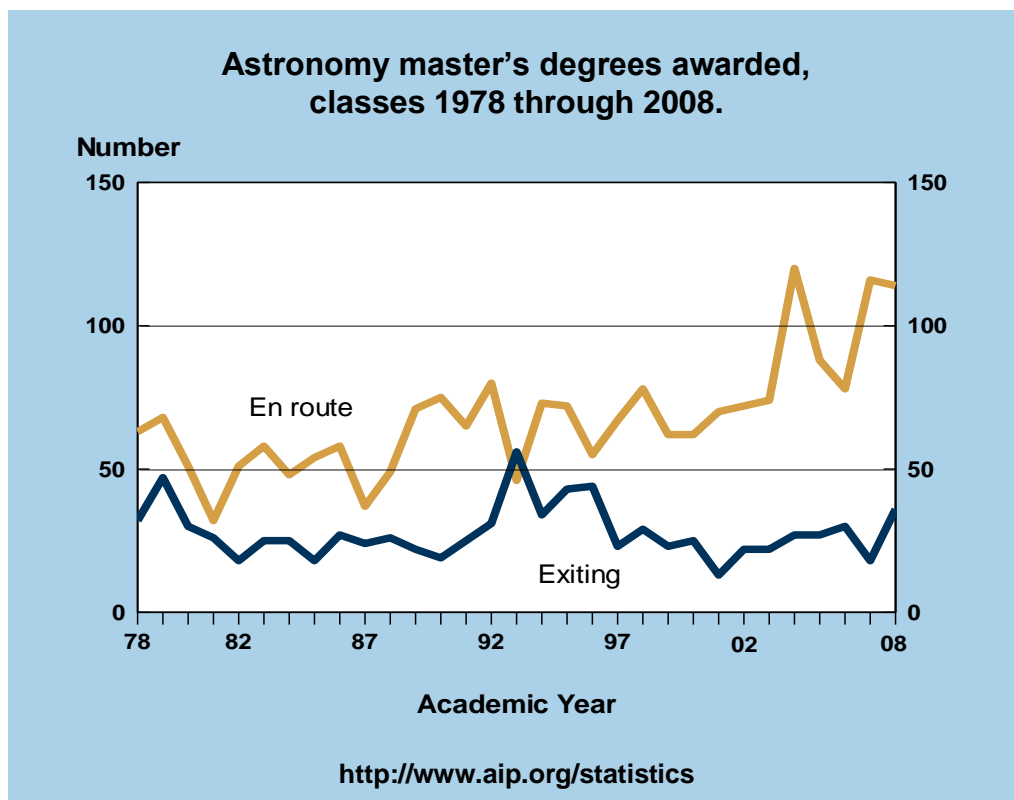


<http://www.aip.org/statistics>

First-year astronomy enrollments for women have declined in the last 5 years.

Astronomy Graduate Degrees

Figure 5

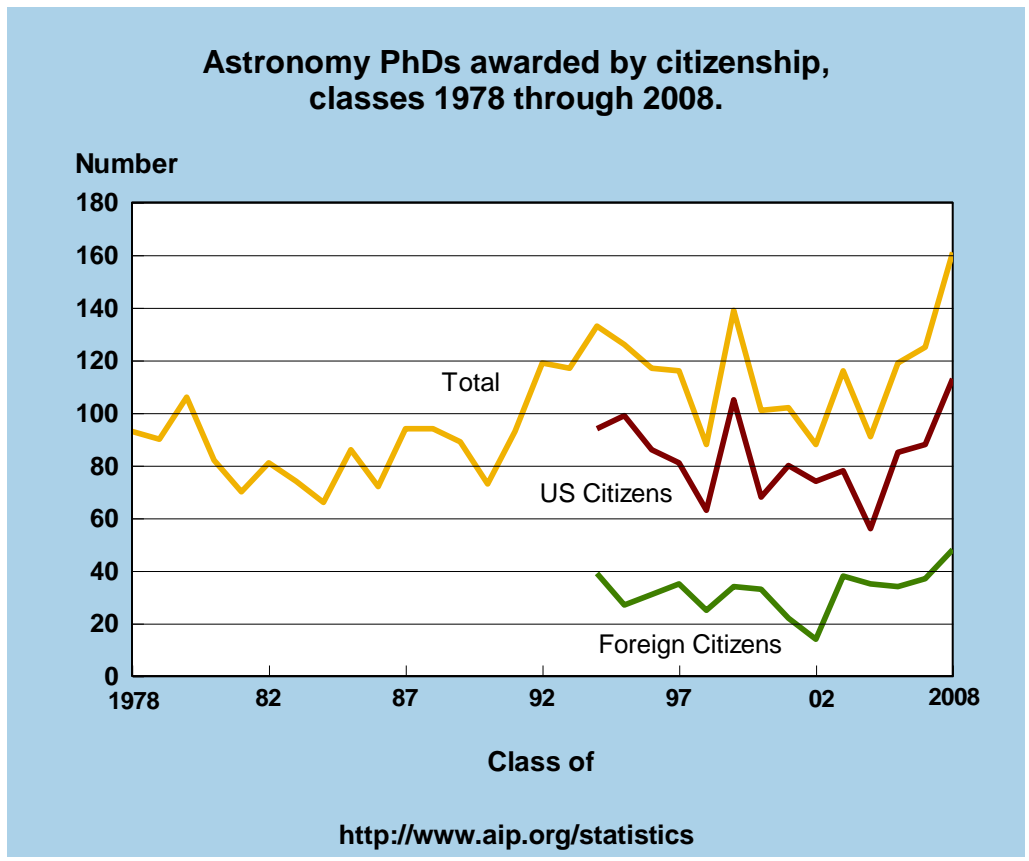


In recent years about 1/8 of first-year astronomy graduate students exited with a master's degree 2 years later.

Exiting master's can come from departments that grant either a master's or a PhD as its highest degree, whereas en route degrees can only be granted at departments where the PhD is the highest degree. There were 36 exiting master's degrees granted in 2008, 8 of which came from San Diego State University, where the master's is the highest astronomy degree offered.

Astronomy PhD production has risen sharply for three consecutive years, increasing 77%. The increase is reflective of the gains seen in U.S. citizens receiving astronomy PhDs. Relative to many of the other physical sciences, astronomy can be considered one of the smallest fields, granting fewer than 200 PhDs per year.

Figure 6



The class of 2008 had 161 astronomy PhDs conferred, representing an all time high.

Table 4

Astronomy departments averaging five or more astronomy doctorate's per year, classes of 2006 through 2008.

| | Annual average |
|-----------------------------------|----------------|
| U of -Texas, Austin | 11 |
| U of Arizona | 8 |
| U of Colorado, Boulder | 8 |
| U of California, Berkeley | 7 |
| Cornell U (NY) | 6 |
| Harvard U (MA) | 6 |
| Princeton U-Forrestal Campus (NJ) | 6 |
| U of Hawaii, Manoa | 6 |
| California Inst of Tech | 5 |
| U of California, Santa Cruz | 5 |

<http://www.aip.org/statistics>

These 10 departments conferred half of the astronomy doctorates granted over the 3 year period.

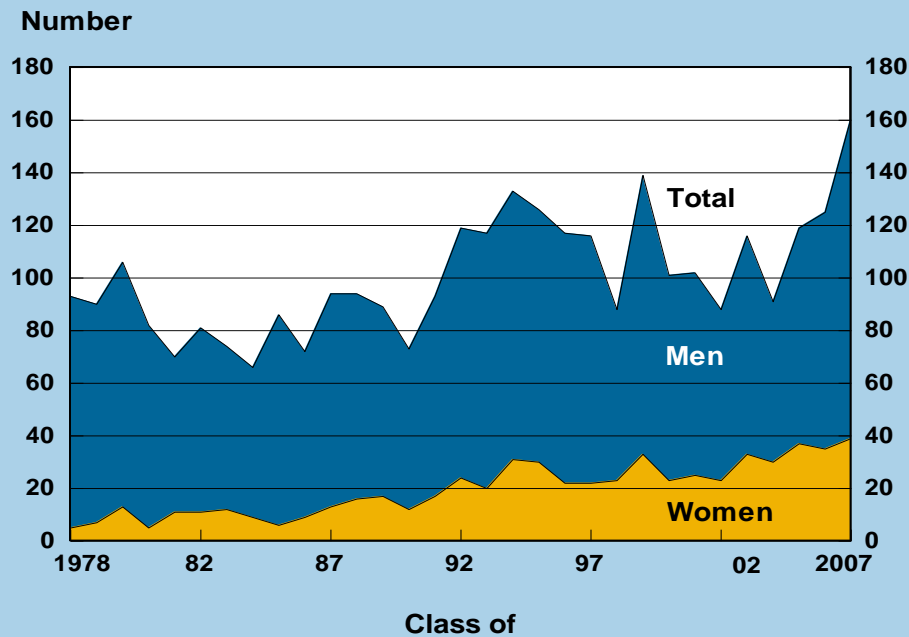
The departments listed in Table 4 are consistently high producers of astronomy doctorate degrees in the U.S. For the 75 departments that grant astronomy doctorate's, the average number of doctorate's awarded per department is about 3 per year.

Women in Astronomy

In 2008, men earned three times the number of astronomy PhDs that women earned. Although women are underrepresented when it comes to the field of astronomy, women astronomy PhDs have a better representation than among physics PhDs, 25% vs. 18%, respectively.

Figure 7

Astronomy PhDs awarded by gender, classes 1978 through 2008.



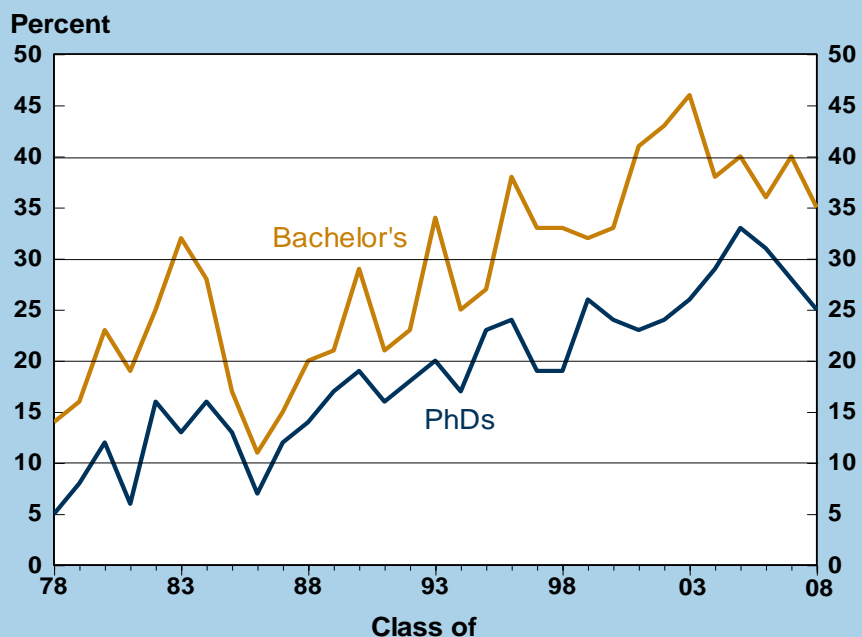
<http://www.aip.org/statistics>

The number of women receiving astronomy PhDs has been increasing in recent years; however, the proportion has declined slightly.

Although the number of women receiving PhDs in astronomy has increased in recent years, the percent of astronomy PhDs granted to women continued to decline for the third consecutive year. In 2008, 35% of astronomy bachelor's were conferred to women. This is down from a high of 46% in 2003.

Figure 8

Percent of bachelor's degrees and doctorate's in astronomy earned by women, classes 1978 through 2008.



The proportion of astronomy degrees earned by women has been declining in recent years.

<http://www.aip.org/statistics>

How the Survey Was Conducted

The Statistical Research Center of the American Institute of Physics conducts an annual census from October through February of all 75 departments that offer degrees in astronomy in the United States. For the class of 2008, we received responses from 73 (97%) of these departments. Estimates were derived and included in the totals for non-responding departments.

In addition to this *focus on* there is a companion report, "Rosters of Astronomy Departments", which provides a department-level enrollment and degree snapshot of the class of 2008. It can be found on our web site: <http://www.aip.org/statistics/trends/reports/astrost.pdf>

These reports are possible because of the efforts of department chairs, faculty, and staff in providing their departmental data to the AIP year after year. We thank them for their ongoing support of this survey series.