

Student Voice

By Vail Weller and
Nanette Quatchak
Feature Editors

This edition's question -
What are your plans for the
summer?



Julie Elabarger
6th semester
Communication Behrend

"I am working with an insurance
firm where they are training me for
a job after graduation."



Jim McDermott
8th semester
MIS

"I'm staying here to take courses
and I'll have an internship. I'll also
be drinking a lot."



Tammy Furiesz
4th semester
Communications

"I'm going to live in Orlando
and I'll be working at Disney World
and getting a great tan."



Dave Fletcher
6th semester
MIS

"I'm going home and framing
houses for my brother and getting a
tan on the Cape."



Jim Byrne
8th semester
MIS

"I'm going to graduate, go to
Hilton Head, SC and then come
back to find a job."

Photos taken by Michelle
Schneider

replace the missing ones, and in
doing so produce tiny bursts of
light. This is what causes the bright
bluish light. Secondly, as I stated
earlier, the sun is reflected off the
bits of material in the coma and tail
which creates the yellowish color.

Where do comets go to? Most
comets move in orbits around the
sun, just like the planets, so they
don't really go anywhere. As early
as 350B.C., Aristotle concluded that
comets don't travel in regular orbits
and that they are not in outer space
but in the Earth's atmosphere. But,
as most theories often are, his was
turned over by a German
Astronomer, Regiomontanus. In
A.D. 1473, he observed a comet for
several nights and traced its

elongated orbit. By making
observations, we are able to plot
out the orbit or path of a comet, and
from these means we know when
the comet will pass Earth again.
For example, Edmond Halley traced
the arc of the now famous Halley's
Comet. He researched previous
sightings in 1682 and predicted its
next visit in 1758. His prediction
came true, and including its 1986
sighting it was spotted a total of
thirty times (sightings occur every
seventy-five [six] years).

If you're not busy during an
evening in the year 2061, look up
in the sky; it may be a bird you see,
possibly even a plane, but if you
see a fuzzy star chances are it's
Halley's comet.

Science Is it Mighty Mouse?

by Robert D. Eggleston
Collegian Staff Writer

Look! Up in the sky; it's a bird,
it's a plane, it's a fuzzy star! No, it's
not a fuzzy star it's a comet. Have
you ever seen a comet? Halley's
perhaps? It's not impossible to see
one, but if you're looking for a
Mighty Mouse kind of streak in the
sky, you might be disappointed.

Where do comets come from? In
his book, *Comets, Meteors and
Asteroids*, Melvin Berger
describes the planets as a group of
houses at a building site and comets
as the "building" materials that are
left over. These leftovers are the
stone and metal pieces that remained
after the planets were formed nearly
five billion years ago. The study of
these bits of material helps us
realize what Earthy as well as the
other planets, are made of, much
like archaeological finds reveal the
cultures of other people.

When a comet isn't in range of
the sun's light, it looks like a dark,
dirty snowball. The nucleus, or the
solid center of the comet, is made
mostly of ice mixed with ammonia,
methane, and carbon dioxide. Inside
this ice ball are bits of rock and
metal; picture a scoop of rocky-road
ice cream. The nuclei of most
comets are as large as one-half mile
to thirty miles across, but the
grains of rock and metal in them are
usually no bigger than a walnut.

Around the nucleus is a dust and
gas mixture called the coma. Its
diameter can reach up to 625,000
miles. That's twenty-five times
bigger than the Earth's. Considering
the average diameter of a coma, can
you imagine seeing the Great
Comet of 1811? Its diameter was
the largest ever recorded, 1.25
million miles across at its widest
point!

Together the coma and nucleus
make up the head of the comet

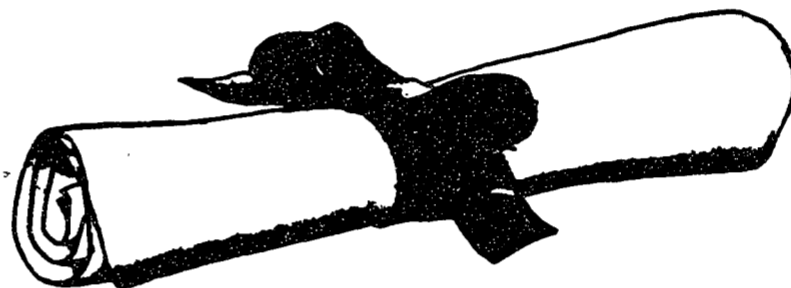
which is followed by another
gaseous mixture. Unlike the coma's
spherical shape, it is streamlined.
Here in the tail, the gases are much
less dense than in the coma. Solar
wind (a high speed stream of
subatomic particles emitted by the
sun) pushes on the gas molecules
and dust particles in the coma. It
spreads them out to form the long
tail, and because the tail is heated
by the pressure of the solar wind on
the head of the comet it always
faces away from the sun. This
phenomenon was first observed by
Girolamo Fracastoro and Peter
Apian, in 1532. The tail extends
out behind the comet only when it
is going toward the sun. At other
times it is either ahead of or to the
side of the comet.

Surrounding the head and part of
the tail is a giant cloud of hydrogen
gas which can be millions of miles
wide. According to Melvin Berger;
"The first hydrogen clouds were
discovered around 1970. Other
observations since then have helped
astronomers realize that the
hydrogen cloud is as much a part of
a comet as the nucleus, coma, gas
tail, and dust tail." Because comets

are made mostly of gas they have
very little mass or matter. In fact, it
is known to scientists that the Earth
has passed through the tail of
comets at least twice. At the times
of passing, though, there was no
tangible evidence to show that we
were traveling through anything.
This is because the matter that
makes up the tail is so thinly spread
out it cannot be detected. In *The
Guide to Halley's Comet*, a
reference is made to just how thinly
spread out the material is: "So
insubstantial is the material of a
comet tail that stars shine through
it with no evident loss of
brightness. The tail is only visible
at all because the tiny dust particles
in it are such marvelous reflectors
of sunlight. The same kind of
phenomenon can be seen in
everyday life when motes--the
 tiniest particles of dust and bits of
other things that ought to be
invisible--can be seen adrift in a
sunbeam."

A comet's light is produced in
two ways. As radiant energy from
the sun knocks electrons from the
gas molecules, other electrons
continued on bottom of page

WHAT'S A DEGREE GOOD FOR?

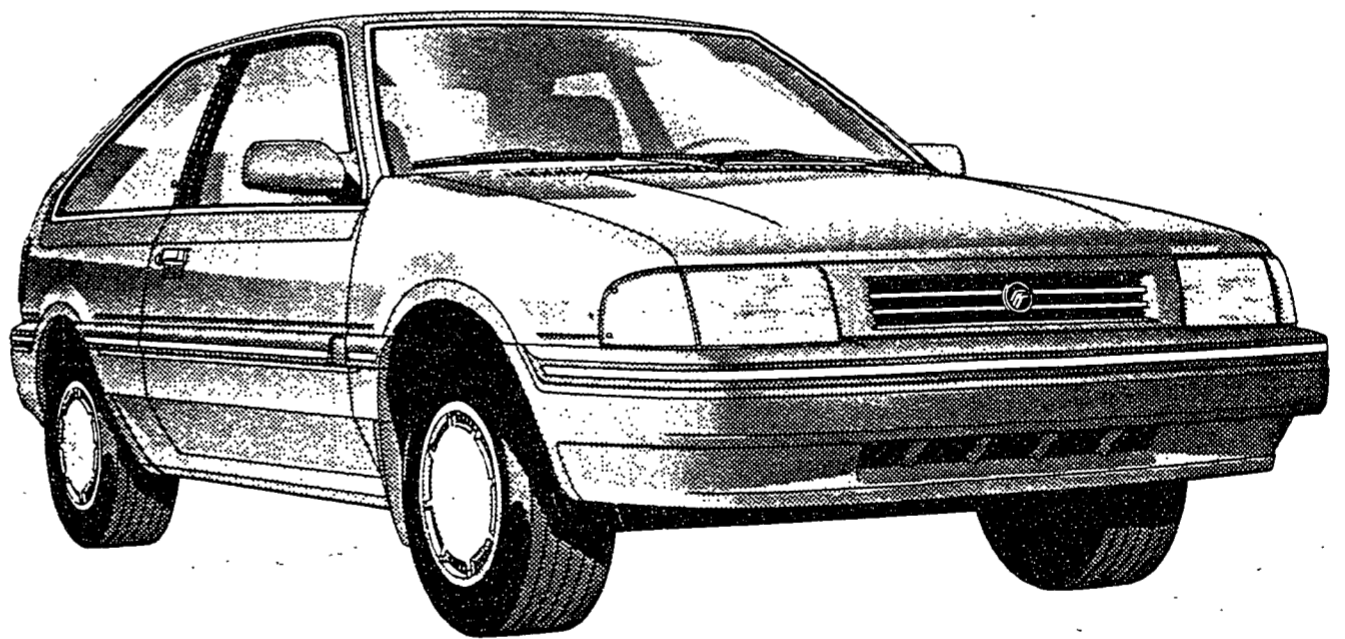


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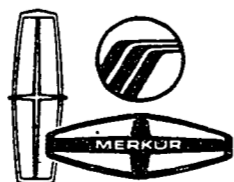
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