

FermiNews

The Newsletter of the Fermi National Accelerator Laboratory

SKY SURVEY TO MAP UNIVERSE

With additional grant funding and new collaborators, the Sloan Digital Sky Survey consortium is moving closer to the start of an ambitious project that will record a map of the universe with unprecedented precision. Whereas previous sky maps have charted celestial objects in two dimensions, the Sky Survey will identify hundreds of mil-

lions of galaxies, quasars, and stars, and map the locations of a million of them in three-dimensional space.

A group of astronomers, including RICHARD KRON and STEVE KENT of Fermilab's Computing Division/Experimental Astrophysics group, conceived the Sloan Digital Sky

Survey in 1988. During the course of the five-year survey, collaborators will record the red shift—an increase in wavelength that varies with velocity of a celestial body—of millions of selected astronomical objects. Knowing the red shift of an object allows astronomers to calculate its distance from the earth and hence its place in three-dimensional space. The resulting 3-D map will test basic features of the Big Bang theory of the origin of the universe.

To create the map, collaborators will use a 2.5 meter telescope located at Apache Point, New Mexico. They will operate the survey in two modes. In the first, they will use a specially adapted camera to record the direction and brightness of objects in the sky, producing a preliminary two-dimensional image. In the second mode, a pair of instruments called spectrographs measure the red shifts of a million selected galaxies and quasars, to add the third dimension, the objects' distance from the earth.

"In only three nights of observing, the new telescope will match the size of the current best red-shift surveys," said Rich Kron.

The development of the Sky Survey, including the construction of its 2.5 meter telescope and related site buildings, is progressing well, according to DON PETRAVICK, associate head of

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Members of the Sloan Digital Sky Survey collaboration at a meeting last August at the Yerkes Observatory in Williams Bay, Wisconsin.

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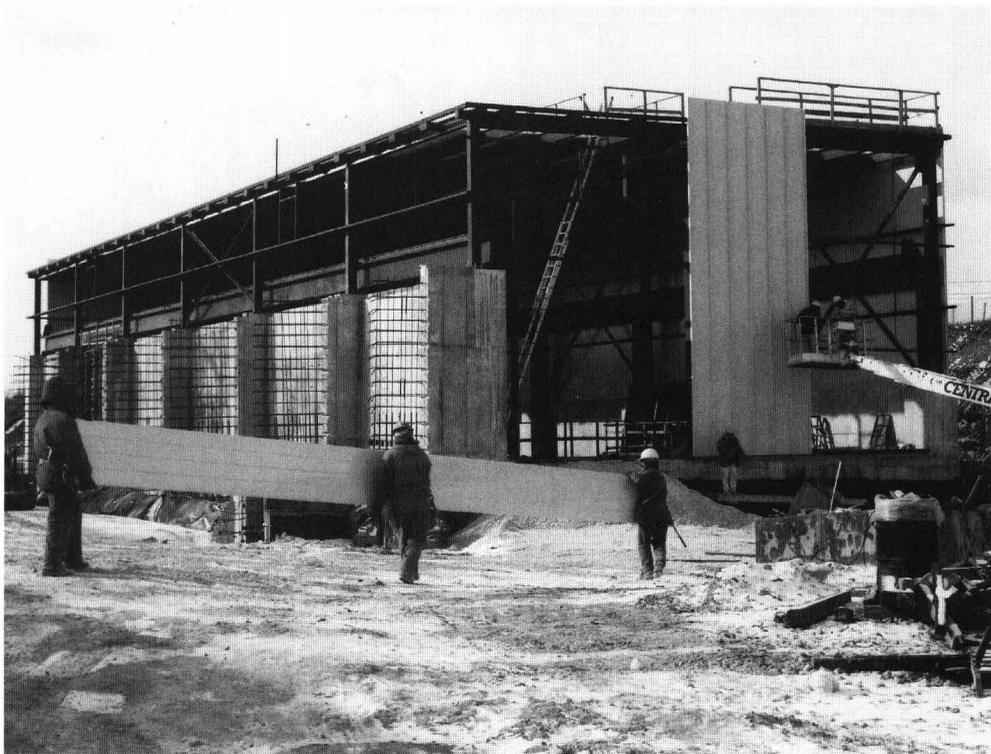
KTeV CONSTRUCTION AT MIDPOINT

Construction of KTeV, one of Fermilab's largest fixed-target experiments to be built in a over a decade, is nearly 50% complete.

What once were open fields now hold the structures for an experimental hall and a decay enclosure. "We are approximately 47% complete with the civil construction," said STEVE DIXON, FESS design coordinator. "The experiment hall building shell is up and the decay enclosure is complete. In upcoming weeks the mechanical and electrical systems will be installed in the experiment hall."

Beam pipe from the existing NM2 tunnel enclosure was incorporated into the experiment's new tunnel enclosure, NM3. To help with cost savings, precast units for the enclosure were purchased from the Main Injector construction supply. "In the new tunnel enclosure we are using the same precast that you find over in the Main Injector, and that is a good design feature," noted Steve. "It really sped things up. The construction contractor can set the precast units in any kind of weather."

Construction is expected to be completed in time for the next fixed-target run in 1996. Once construction is finished, KTeV experimenters will begin exploring one of the great puzzles of particle physics: How did the universe come to contain matter without an equal amount of antimatter? ■



SLOAN SKY SURVEY

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the Computing Division On Line Systems group. "We are very pleased with the project so far," he said.

During the last two years, the collaboration has received grants from the Alfred P. Sloan Foundation and the National Science Foundation, in addition to funding from the Sky Survey's participating institutions. New collaborators from the University of Washington and the U.S. Naval Observatory have joined the Sky Survey, whose other members include the Institute for Advanced Study, the Japan Promotion group, Johns Hopkins University, Princeton University, the University of Chicago and Fermilab. Two groups from Fermilab's Computing Division, the On Line Systems group and the Experimental Astrophysics group, as well as members of the Research Division's Theoretical Astrophysics group, work on the project.

"We've done well in identifying resources for the project, but not all of the fundraising is behind us," Rich noted.

Among the Sky Survey's construction accomplishments of the past few months was installation of the monitor telescope at Apache Point. This small telescope, located next to the 2.5 meter telescope, will begin measurement of the calibration stars for the survey. Members of Fermilab's Experimental Astrophysics and On Line Systems groups recently completed the detector, camera assembly, and data acquisition systems for the monitor telescope, which is currently being commissioned.

Collaborators are very pleased with another element of the Sky Survey's apparatus, the drift scan camera, built

by Fermilab astrophysicist TIM MCKAY and members of the Research Division's Detector Electronic Systems group. The drift scan camera serves as a prototype for the Sky Survey's camera. "We are using the drift scan camera to get a preliminary look at what the Sloan Sky Survey will actually show us.

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Sloan Digital Sky Survey collaborators will soon begin to map the universe, perhaps detailing galaxies similar to this one.

BOOSTERS NEEDED FOR SCIENCE BOWL

Don't forget February 25 is Science Bowl Saturday. Three more high school teams have joined the roster, pushing up the total number of participating schools to our maximum of 16. With so many of the Fox Valley and surrounding rural area's outstanding students playing, this year's competition is bound to be fast paced and exhilarating.

Although all of the students will leave Fermilab with certificates of participation, only one team will walk away the champion. But, perhaps the most important thing that they will all take home is a tremendous sense of accomplishment after going head to head in the academic competition. You can

help them all feel like winners by turning out to cheer for your favorite team or to root for all of the teams, starting at 8:30 a.m. in Wilson Hall. Programs will be available in the lobby of Ramsey Auditorium.

The academic competition looks to be tough with last year's second place winner, Batavia High School, back for another try at the title. Who will end up this year's winner and travel to the 1995 National Science Bowl® April 28-May 1 in Washington, D.C. courtesy of the Department of Energy? Come out next Saturday and find out.

Scheduled to appear in this year's 1995

Fermilab Regional Science Bowl are:

Batavia High School
Bolingbrook High School
Burlington Central High School
Crystal Lake Central High School
Crystal Lake South High School
Dundee-Crown High School
Hampshire High School
Hinckley-Big Rock High School
Huntley High School
Lincoln-Way High School
Lockport High School
Mooseheart High School
Peotone High School
Plainfield High School
Streamwood High School
Sycamore High School

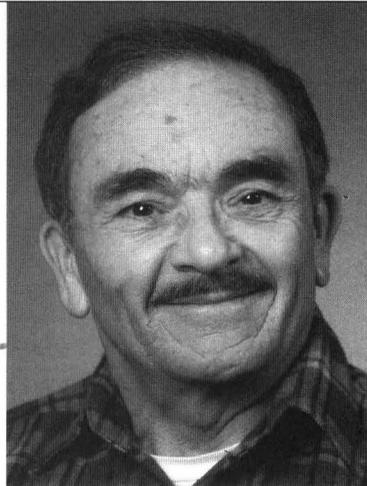
People & Events

JOSE SOTO RETIRES

Jose Soto retired today, Feb. 17, after 13 years of service to the Laboratory. Jose, an employee in the Accelerator Division Cryogenic Department, began working at Fermilab in September 1982.

Jose hasn't made any definite plans for his retirement, but might visit Puerto Rico.

"I want to thank all my coworkers in the department for their help," said Jose. "I was impressed with the people and the projects. It was very different, and I never thought it would be like this."



ED SZARZYNSKI TO RETIRE

ED SZARZYNSKI of the Technical Support Section Machine Shop is retiring from the Lab after nearly 13 years of service. Ed began working at Fermilab in December, 1982 in Technical Support. He says good-bye March 3, 1995.

Ed said that although he enjoyed working here, he is looking forward to his future plans of traveling, fishing and playing golf.

Correction

In the February 3, 1995 issue of *FermiNews* the Waste Minimization Subcommittee Waste Line article contained an error. It was recommended that employees recycle toner cartridge boxes and packaging separately. Employees, rather, should repack all material from the toner cartridge box, including the old cartridge, styrofoam inserts, instruction sheets (if possible) and all parts, into the original box.

In order for the recycler to rebuild the toner cartridges, all materials need to be intact and arranged as closely as possible to the original packaging. The toner cartridge recycling bin is located in the basement of Wilson Hall.



Ezra Knight as Othello (l) and Allen Gilmore as Iago in the Acting Company production of Othello.

ARTS SERIES PRESENTS

Othello: The Acting Company
Saturday, March 4, 1995

Considered to be one of Shakespeare's greatest plays, Othello is a tragedy built of jealousy. The intimate story follows the Moor, Othello, a great general in the service of the Venetian republic, and Iago, Othello's ensign, who seems to be an honest soldier but who is, in truth, a malevolent man. States director Penny Metropulos, "Although there is no real metaphysical or political world picture in the play, to me Othello reflects the most important part of the world: human relations."

The Acting Company is unlike any other professional theater in America. Their mission is unique. They are devoted to the art of acting and to producing that art for a national audience. Their mission is to develop America's most gifted young actors by touring them in an exciting repertory of classic and contemporary plays. Since its founding in 1972 by Margot Harley and John Houseman, the company has played before nearly two million people and helped further the careers of almost 200 actors.

Othello will be at Ramsey Auditorium for one performance only on Saturday, March 4 at 8 p.m. Tickets are \$15. For reservations, call xARTS.

MOVIE SCHEDULE

The Fermilab International Film Society presents movies from all over the world. Movies are shown at 8 p.m. Fridays in Ramsey Auditorium. All foreign films have English subtitles. Admission is \$3 for adults, \$.50 for children 12 and under. Coffee and cookies will be served on the second-floor mezzanine following each film.

■ February 24: *The Match Factory Girl (and a short)*, Spurned by her one-night lover and pregnant, a factory girl plots revenge on all men. The cruelty is made bearable by deft interspersions of humor. Aki Kaurismaki, director, Finnish, 1993, 70 minutes.

BENEFITS NOTES

FLEXIBLE SPENDING ACCOUNT FILING DEADLINE

The deadline to file eligible expenses to your flexible spending account is fast approaching. Eligible 1994 bills must be in CIGNA's office by March 31, 1995. Claim forms are available from the Benefits Office, WH15SW.

Harper's Index

Attendance at opening day at the Smile Face Museum in Silver Springs, Maryland: **100**

Number of dummies on display at the Vent Haven Ventriloquism Museum in Fort Mitchell, Kentucky: **642**

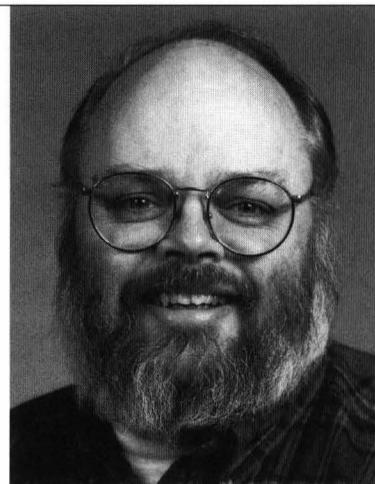
WYATT RECEIVES HONORS FROM BOY SCOUTS

GEORGE WYATT of CDF was honored for his service to area youth by the Boy Scouts of America Chicago Area Council #118 at a ceremony January 28, 1994. He was awarded the Silver Beaver Award.

The Silver Beaver Award is the highest honor the council can bestow upon one of its scouters. Recipients are nominated by a committee. This year, only 12 scouters were chosen for the award.

"It is nice to be recognized by your peers for the work that you do," said George.

George has been active in the Boy Scouts organization since 1978. Through the years he has held many positions, including den leader, scoutmaster and district program chairperson. He is presently serving as troop committee chairperson, explorer post adviser and Chicago-area council cub scout training co-chair with his wife Shar.

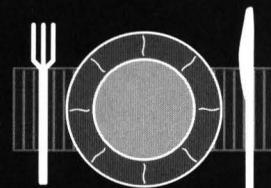


Congratulations

To ERIC LARSON (TS) and NANETTE LARSON (BSS) on the birth of their son Connor August Larson. Connor was born December 23, 1994 at 5:56 a.m. at Mercy Center Hospital in Aurora. He weighed seven pounds, 12 ounces and was 20 3/4 inches long. Connor is the Larson's first child.

Chez Léon Menu

Lunch (Wed) \$8.00 • Dinner (Thurs) \$20.00
Reservations: x4512



Wednesday, February 22 • *Chicken rigatoni w/roasted yellow pepper sauce, apple walnut cake w/calvados cream*

Thursday, February 23 • *Lobster bisque, stuffed flank steak, rice pilaf, profiteroles*

RECREATION NEWS

WHAT'S HAPPENING IN OUR RECREATION AND WELLNESS PROGRAMS

Current programs, activities and news regarding the Recreation Office and the Wellness Works Subcommittee are advertised in many ways. Agendas for Wellness Works Brown Bag seminars are listed in FNAL.EVENTS, Public Quickmail folders and *Ferminews*. Programs, activities and news for the Recreation Office are also listed in the FNAL.EVENTS folder, as well as on posters and in *Ferminews* articles.

You may also find out all the current happenings and information through the Recreation Office's file server. To access the file server (for Macintosh users):

- select chooser in the Apple Menu
- select appleshare and LS/Main Ethernet
- select Jean's Mac and click OK
- select guest and click OK
- select a file

SLOAN SKY SURVEY

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It's like using a detector prototype in a test beam for a particle accelerator experiment," Tim said.

With service buildings and housings for the telescopes finished, the group is concentrating on completing the 2.5 meter telescope. They expect to assemble the telescope on site at the beginning of May. All instruments for the telescope, including the Fermilab-created data-acquisition system, should be installed by late fall of 1995. After a period of debugging and a year of imaging the sky, the group

DELTA DART CONTEST COMING

The Fermilab Barnstormers Radio Control Model Club will host the annual Delta Dart Contest at Kuhn Barn on Wednesday night March 8, 1995, at 5:30 p.m. Everyone is invited.

A Delta Dart is a small rubber band powered airplane constructed of balsa wood and tissue paper. You can build one of these airplanes in less than an hour and fly it indoors that evening in the Kuhn Barn for fun and prizes. No experience is necessary to build and fly your own creation since you will be guided through every step of the construction

and given some special tips for efficient flying.

The entry fee is \$1 for adults and teenagers. No entry fee for junior class (children 12 and under). Everything you need to build and fly is included in the entry fee. The junior class contest will be held at 7 p.m. sharp.

Guaranteed fun for all. For more information call JAY HOFFMAN at x4156, JIM ZAGEL at x4076, ALAN HAHN at x2987, DAVE SLIMMER at x4334 or TONY LEVELING at x4041.

WELLNESS WORKS EVENTS

The Wellness Works Committee has announced their upcoming events for February and March. Mark your calendars—for the health of it.

- A blood pressure screening will be held Wed., Feb. 22 from 11:30 a.m. to 1 p.m. in the Wilson Hall Atrium.
- Thomas Huberty from Castle Ortho-

pedics and Sports Medicine will present a brown bag seminar Tues., Feb. 28 on sports injuries with emphasis on knees. The seminar will be held from 12 noon to 1 p.m. in the 1W Conference Room.

- A Weight Watchers informational meeting will be held March 2 from 12 noon to 1 p.m. in the Wilson Hall Ground Floor Conference Room.

hopes to begin creating their three-dimensional map of the universe in 1997.

Once the Sky Survey is underway, Fermilab will be the hub for all data-processing activity. As data streams in from the survey, a computing system created by Fermilab's On Line Systems group will analyze and archive the results. Under the guidance of Don Petravick and RUTH PORDES, the On Line Systems group has also written a large software package to allow scientists to work with the data from the survey without traveling to the observatory. The group also has a role in integrating and

testing software that scientific collaborators deliver to the project. The Computing Division is also evaluating the purchase of the computing system that will analyze the data as it comes from Apache Point.

Don points out that much remains to be done to complete the data processing system and a data base system for the Sky Survey, but he remains optimistic. He credits the success of the project so far with the teamwork of the collaboration. "We are all having a good time and are starting to deliver real things, and that makes us all happy." ■

GOLF LEAGUE ANNOUNCES SEASON WINNERS

With the holidays over and a new year begun, we are looking forward to the 1995 golf season to begin in April. New representatives have been elected from each of the four golf leagues at Fermilab. The 1995 league reps are:

St. Andrews/Wed. Night:

Pat Liston and John Nijdzion

Fox Valley/Tues. Night:

Glenn Federwitz and Mike Mascione

Fox Valley/Wed. Night:

Tim Gierhart and Danny Snee

Hughes Creek/Tues. Night:

Arnie Knauf and Rod Klein

If anyone would like to join a league as a member or a sub, contact one of the people above to have your name added to the waiting list. There are limited openings in all four leagues.

Last year's season ended with our final outing at Blackberry Oaks Golf Course. The final match between the first place teams from all four leagues was played that day and the winners (recognized as the Fermi Golf Championship team

for 1994) were the Wed. Night Fox Valley team of Mike May, Tim Gierhart, Jerry Leibfritz and Bale Flores. Trophies were also awarded to the following golfers:

St. Andrews Golf League:

First Place: Rich Vidal, Steve Baginski, Don Flynn, Al Flowers, Alt: Vic Scarpine

Second Place: Nick Rogus, Don Rogus, Bill Koncelik, Joe Morgan, Alt: Andy Rogus

Third Place: Brian Charles, Ralph Pasquinelli, Fred Ullrich, Steve Holmes

Most points at 31: Steve Baginski

Lowest average at 41: Brian Charles

Hughes Creek Golf League:

First Place: Bob Andree, Don Arnold, Fred Nobrega, Jim Kerby

Second Place: John Anderson, Al Baumbaugh, Dyrrell Lewis, Rich Mahlum, Alt: Ken Treptow

Third Place: Stuart Fuess, Peter Mazur, Rajendran Raja, Mike Tartaglia

Most points at 25/three way tie: Ron

Evans, Jim Kerby and Fred Nobrega

Lowest average at 41: Tom Peterson

Fox Valley Tuesday Golf League:

First Place: Darrell Sigmon, Mike Mascione, Dwight Featherston,

Monty Emmons, Alt: Brian Kramper

Second Place: Glenn Federwitz, Steve Baginski, Wayne Johnson, Paul Allcorn, Alt: Carl Lumberg

Third Place: Jim Harder, Bob Williams, Fred Walters, Leonard Nelson, Alt: Tom Rathbun

Most points at 37: Steve Baginski

Lowest average at 40: Darrell Sigmon

Fox Valley Wednesday Golf League:

First Place: Mike May, Jerry Leibfritz, Tim Gierhart, Bale Flores

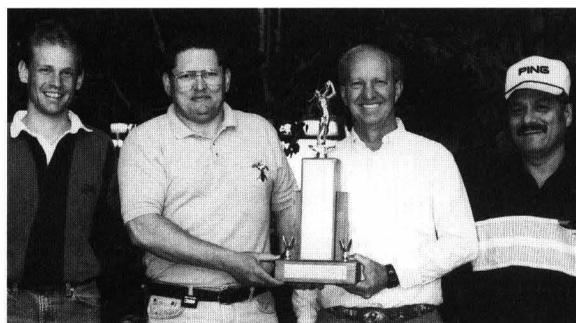
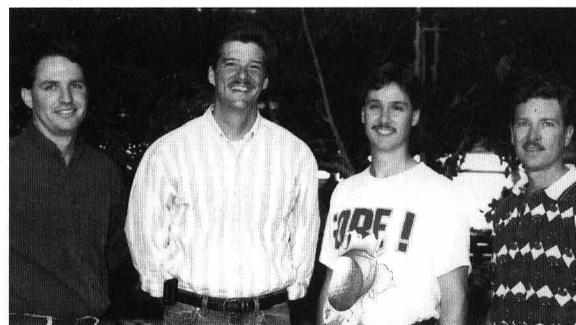
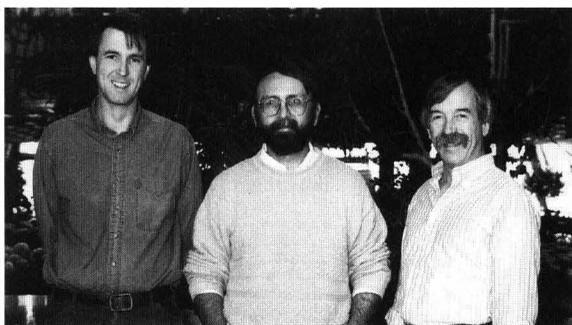
Second Place: Leon Straus, Herm Stredde, Danny Snee, Don Szarzynski, Alt: Joe O'Malley

Third Place: Darrell Sigmon, Ron Haynes, Dave Hornback, Claudie King

Most points at 38: Jerry Dyche

Lowest average at 39: Darrell Sigmon

—Pat Liston



First place league winners were (Top left, l-r) St. Andrews Golf League: Don Flynn, Rich Vidal and Al Flowers, not pictured: Steve Baginski and Vic Scarpine. (Top right, l-r) Hughes Creek Golf League: Jim Kerby, Bob Andree, Fred Nobrega and Don Arnold. (Bottom left, l-r) Fox Valley Tuesday Golf League: Brian Kramper, Darrell Sigmon, Dwight Featherston, Monty Emmons and Mike Mascione. (Bottom right, l-r) Fox Valley Wednesday League: Jerry Leibfritz, Tim Gierhart, Mike May and Bale Flores.

CLASSIFIEDS

VEHICLES

1993 Grand Voyager, fully-equipped, 55k miles, excellent condition, \$15,900. Call Mike at x3371.

1987 VW Golf GL, 3 door hatchback, sun roof, radio, 5 speed, rear wiper & defogger, no AC, 30.5 mpg-city, 107k miles, runs good, no rust, garage kept, excellent maintenance, \$2,400. Call Carmen at x3834 or 708-529-0135.

MISCELLANEOUS

Set of 3 oval braid rugs: 1, 8'x12'. 2, 22"x33", \$150; Service for 8 (48 pc.) platinum banded china & crystal (25 pc.), \$150. Call 708-897-1632 after 6 p.m.

Guitar amp, Peavy half-stack, VTM-120, excellent condition, \$650; TV stand, light oak 16" deep x 26" wide x 25" wide, \$75;

water bed, queen-size w/heater & safety liner, \$75. Call Ron at x4663 or 708-466-1823.

Apartment-size dining set, table & 4 chairs, maple, excellent condition, \$200. Call 708-879-8957.

Octagonal walnut club table, 4 matching chairs w/upholstered cushions, 1 leaf, table is 42"l x 42"w x 27"h (w/o leaf), excellent condition, \$300; Ladies' Northwestern golf clubs, right-handed, powder blue/white bag, used twice, \$300; Smith-Corona Galaxie XII manual portable typewriter w/hard-sided carrying case, excellent condition, \$25. Call Shelley at x3324.

14 ft. aluminum fishing boat, includes 1950? 5HP Johnson outboard, runs great, 12/24 volt trolling motor & trailer w/new wheel bearings & 2 new tires & spare. Boat has 3 pedestal swivel seats, good condition, \$700

o.b.o. Call Chuck at x2925, LD pager 708-536-8410 or 708-879-0394 evenings.

Moving sale: 2 air cond. window units, lawn mower, Weber, various lawn equipment, picnic table, bicycle, sewing machine, VCR, bookcase, double mattress/box springs. Call Paula at 708-892-1468.

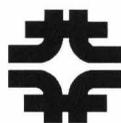
Frigidaire stand-up washer/dryer set. Washer: 2 speed, 3 cycle, 4 temperature, 3 level. Dryer: 120V electric, timed dry heat/fluff, \$500 o.b.o. Call Jim at x2207.

NEEDED

Transportation needed for a visually-impaired person w/excellent mobility & no dog between Naperville (Washington St. @ 75th St.) & Industrial Center Building one day a week. Call George Villa at x2899 or 708-416-3875.

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Please send your article
submissions or ideas to
the Publications Office.

