COMMUNITY NOTES

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younger than 60. For information, call Suzanne Bjaranson at

503-861-4202.

Columbia Senior Diners

— 11:30 a.m., 1111 Exchange
St. Cost is \$6. For information, or to have a meal delivered, call 503-325-9693.

Warrenton Kiwanis Key Club — 11:45 a.m., Warrenton High School, 1700 S. Main Ave, Warrantor

Warrenton Senior Lunch Program — noon, Warrenton Community Center, 170 S.W. Third St. Suggested donation of \$5 for seniors and \$7 for those younger than 60. For information, or to volunteer, call 503-861-3502 Monday or Thursday.

Astoria Rotary Club — noon, second floor of the Astoria Elks Lodge, 453 11th St. Guests always welcome. For information, go to AstoriaRotary.org

Knochlers Pinochle Group
— 1 p.m., Bob Chisholm Community Center, 1225 Avenue
A, Seaside. Cost is \$1 per regular session per person. Players with highest and second highest scores split the prize.
Game is designed for players 55 and older, but all ages are welcome.

Mahjong for Experienced Players — 1 p.m., Astoria Senior Center, 1111 Exchange St. For information, call 503-325-3231.

Astoria Alzheimer's & Other Dementia Family Support Group — 2 to 3:30 p.m., first-floor conference room, Clatsop Care Center, 646 16th St. Open to all family members of people with dementias. For information, call Rosetta Hurley at 503-325-0313, ext. 222, or email support@clatsopcare. org

Line Dancing for Seniors
— 3 to 4:30 p.m., Astoria
Senior Center, 1111 Exchange
St. Not for beginners. For information, call 503-325-3231.

Astoria Toastmasters — 6:30 p.m., Hotel Elliot conference room, 357 12th St. Visitors welcome. For infor-

mation, go to toastmasters. org or call Christa Svensson at 206-790-2869.

TUESDAY
Stewardship Q

Stewardship Quilting Group — 9:30 a.m. to 1:30 p.m., First Lutheran Church, 725 33rd St. All are welcome. Donations of material always appreciated. For information, call Janet Kemp at 503-325-4268.

Do Nothing Club — 10 a.m. to noon, 24002 U St., Ocean Park, Wash. Men's group. For information, call Jack McBride at 360-665-2721.

Senior Lunch—11:30 a.m., Bob Chisholm Senior Center, 1225 Avenue A, Seaside. Suggested donation of \$3 for those older than 60; \$6.75 for those younger than 60. For information, call Suzanne Bjaranson at 503-861-4202.

Columbia Senior Diners — 11:30 a.m., 1111 Exchange St. The cost is \$6. For information, or to have a meal delivered, call 503-325-9693.

Astoria Lions Club — noon, Astoria Elks Lodge, 453 11th St. Prospective members welcome. For information, contact Charlene Larsen at 503-325-0590.

Astoria-Warrenton Duplicate Bridge Club — 12:30 to 4 p.m., Astoria Senior Center, 1111 Exchange St. Anyone may play if they have a partner; to request a bridge partner, call 503-325-0029.

Art Circle — 1:45 to 3:45 p.m., CMH-OHSU Knight Cancer Collaborative, Activities Classroom 128, 1905 Exchange St. Creativity wellness/art circle group for those living with cancer or chronic illness with assistance from credentialed art therapists. Led by Meagan Sokol and Sheryl Redburn. Free registration encouraged. Dropins always welcome. For questions, or to register, call 503-338-4520.

Authentic Spiritual Conversations — 7 to 8:30 p.m., Activity Center, first floor, CMH-OHSU Knight Cancer Collaborative, 1905 Exchange St. Open dialogue about spiritual issues. All faiths, including "spiritual but not religious" welcome. For information, email info@cgifellowship.org or call 916-307-9790.

call 916-307-9790. **WEDNESDAY**

Mindfulness Meditation Group — 7 to 7:45 a.m., CMH-OHSU Knight Cancer Collaborative, Activities Classroom 128, 1905 Exchange St. Join to learn more or to practice. Free and open to all, drop-ins welcome. For information, call 503-338-4520.

Chair Exercises for Seniors — 9 to 9:45 a.m., Astoria Senior Center, 1111 Exchange St. For information, call 503-325-3231.

Warrenton Mothers of Preschoolers (MOPS) — 9:30 to 11:30 a.m., 88786 Dellmoor Loop, Warrenton. Moms of children ages infant through kindergarten are invited. Free breakfast and child care provided. For information, go to mops.org/groups/warrentonmops

Help Ending Abusive Relationship Tendencies (HEART) — 10 to 11:30 a.m., The Harbor, 1361 Duane St. Open group, covers effects of domestic violence on children, parents and other family members; for females, those who identify as female, anyone in an abusive relationship, or who knows someone who is. For information, call Juli Hol at 503-325-3426, ext. 103.

Wickiup Senior Lunches — 11:30 a.m., Wickiup Grange Hall, 92683 Svensen Market Road. Free for those older than 60 (\$3 suggested donation), \$6.75 for those younger than age 60. For information, call Suzanne Bjaranson at 503-861-4202.

Senior Lunch — 11:30 a.m., Bob Chisholm Senior Center, 1225 Avenue A, Seaside. Suggested donation of \$3 for those older than 60; \$6.75 for those younger than 60. For information, call Suzanne Bjaranson at 503-861-4202.

Columbia Senior Diners
— 11:30 a.m., 1111 Exchange

St. The cost is \$6. For information, or to have a meal delivered, call 503-325-9693.

Blood Pressure Checks
— noon to 2 p.m., Astoria
Senior Center, 1111 Exchange
St. For information, call
503-325-3231.

International Longshore and Warehouse Union Pensioners — noon luncheon, 1 p.m. meeting, Local No. 50 Longshore Hall, 491 Industry St.

Warrenton Kiwanis Club— 1 p.m., Arnie's Café, 1609 S.
Main Ave., Warrenton.

Sit & Stitch — 1 to 3 p.m., Homespun Quilts & Yarn, 108 10th St. Bring knitting, crochet or other needlework projects along to this community stitching time. All skill levels welcome.

Mahjong for Experienced Players — 1:15 p.m., Astoria Senior Center, 1111 Exchange St. For information, call 503-325-3231.

Beginner Line Dancing for Seniors — 1:30 to 3 p.m., Astoria Senior Center, 1111 Exchange St. For information, call 503-325-3231.

Fat Quarter Quilters — 5:30 to 8 p.m., Homespun Quilts, 108 10th St. Not limited to quilts. For information, call 503-325-3300 or 800-298-3177 or go to homespunquilt. com

Warrenton Sunrise
Rotary Club — 6 p.m.,
Uptown Café, 1639 S.E. Ensign
Lane, Warrenton. For information, call 503-325-4030.

THURSDAY

Chair Exercises for Seniors — 9 to 9:45 a.m., Astoria Senior Center, 1111 Exchange St. For information, call 503-325-3231.

Alzheimer's Support Group — 11 a.m. to 1 p.m., Nehalem Bay House, 35385 Tohl Ave., Nehalem. Free lunch provided. For information, call 503-368-6445.

Wickiup Senior Lunches
— 11:30 a.m., Wickiup Grange
Hall, 92683 Svensen Market Road. Free for those older
than 60 (\$3 suggested donation), \$6.75 for those younger

than age 60. For information, call Suzanne Bjaranson at 503-861-4202.

Senior Lunch — 11:30 a.m., Bob Chisholm Senior Center, 1225 Avenue A, Seaside. Suggested donation of \$3 for those older than 60; \$6.75 for those younger than 60. For information, call Suzanne Bjaranson at 503-861-4202.

Columbia Senior Diners — 11:30 a.m., 1111 Exchange St. The cost is \$6. For information, or to have a meal delivered, call 503-325-9693.

Warrenton Senior Lunch Program — noon, Warrenton Community Center, 170 S.W. Third St. Suggested donation of \$5 for seniors and \$7 for those younger than 60. For information, or to volunteer, call 503-861-3502 Monday or Thursday.

Seaside Rotary Club — noon, Outlet Mall, 1111 N. Roosevelt Drive, No. 206, Seaside. Lunch costs \$15. All are welcome. For information, go to seasiderotary.club

Astoria-Warrenton Duplicate Bridge Club — 12:30 to 4 p.m., Astoria Senior Center, 1111 Exchange St. Anyone may play if they have a partner; to request a bridge partner, call 503-325-0029.

Knochlers Pinochle
Group — 1 p.m., Bob
Chisholm Community Center, 1225 Avenue A, Seaside.
Group hosts free refresher
and beginning course in card
game of pinochle. This course
open to anyone 55 and older.

Art Circle — 1:45 to 3:45 p.m., CMH-OHSU Knight Cancer Collaborative, Activities Classroom 128, 1905 Exchange St. Creativity wellness/art circle group for those living with cancer or chronic illness with assistance from credentialed art therapists. Led by Meagan Sokol and Sheryl Redburn. Free registration encouraged. Dropins always welcome. For questions, or to register, call 503-338-4520.

Jam Session — 6:30 to 8:30 p.m., Astoria Senior Cen-

ter, 1111 Exchange St. Open to the public. For information, call 503-325-3231.

Clatsop County Republicans — 7 p.m., BJ's Pizza Palace, 2490 U.S. Highway 101. For information, call 541-969-2976 or go to tinyurl.com/CCRepublican

FRIDAY

AAUW Walking Group
— 9:30 a.m. Seaside Branch
of American Association of
University Women weekly
low-impact group walk, followed by coffee and fellowship. For information, call
503-738-7751.

Senior Lunch — 11:30 a.m., Bob Chisholm Senior Center, 1225 Avenue A, Seaside. Suggested donation of \$3 for those older than 60; \$6.75 for those younger than 60. For information, call Suzanne Bjaranson at 503-861-4202.

Columbia Senior Diners — 11:30 a.m., 1111 Exchange St. The cost is \$6. For information, or to have a meal delivered, call 503-325-9693.

Community Skate Night — 5 to 9 p.m., Astoria Armory, 1650 Exchange St. Admission \$3. Limited roller skate rentals available for \$3; roller blades available. For information, call 503-791-6064 or go to astoriaarmory.com

OTHER Project

Quilting Project Needs Fabric — Our Saviour's Lutheran Church, Seaside. Needs polyester/cotton fabric, 1/2 yard or larger, and clean sheets (queen or king size) for group that makes quilts for those in need within the U.S. and around the world. For information, or to donate, call Claudia Kulland at 503-738-5895.

Blankets Needed — Columbia Veterinary Hospital, 576 31st St. Needs blanket donations for their four legged patients. Anything is helpful, even the stained or frayed. Donations can be dropped off during business hours (closed for lunch from noon to 1:30 p.m.) Monday through Saturday.

Saturn spent billions of years without famous rings

By MARCIA DUNN
Associated Press

CAPE CANAVERAL, Fla. — Saturn may have flown solo for billions of years — almost its entire existence — before getting its stunning set of rings, a new study suggests.

An Italian-led team reported Thursday in the journal Science that Saturn's primary rings appear to be just 10 million to 100 million years old. The gas giant Saturn, on the other hand, is 4.5 billion years old, like all the other planets in our solar system.

The findings are based on data collected by NASA's Cassini spacecraft while repeatedly diving between Saturn and its rings in 2017, shortly before its demise.

By estimating the mass of the rings through gravity measurements, the researchers gauged the age of the three main rings. It's still a mystery, though, how these icy rings formed. Scientists suspect a collision between two of Saturn's many moons or perhaps a moon and comet.

The rings are made mostly of ice. The remaining 1 percent is dust and possibly organic contaminants. Overall, the material ranges in size from tiny particles, to pebbles, to boulders.

Lead researcher Luciano
Iess, a planetary scientist
at Sapienza University in
Rome, said orbital motion
sprayed the dust and other
contaminants onto the icy
rings at a constant rate. His
team calculated the length
of time it would take for the
contaminants to accumulate
— it turned out to be 10 million to 100 million years.

It's possible the rings originally were denser than they are now and have thinned over time.

