

Massachusetts Orchid Society

P.O. Box 1041
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AUG 2022

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Minute Minutes

Notes from the Board

◆ **CALL FOR AUCTION DONATIONS!**

The MOS Auction is around the corner, and we need your divisions, seedlings or just any orchids you're ready to say goodbye to. This is our second largest annual fundraiser, not to mention it's the best opportunity to come away with great deals on unique orchids, for growers of all levels.

Email MOS-Board@massorchid.org to find out how to donate.



◆ ***MOS Summer BBQ is August 6th!*** *Details, page 5.*

Did you know you can submit articles to the newsletter? Got extra orchid supplies you want to unload or looking for garden swaps? Submissions are due 10 days prior to monthly meetings. Email Anne at newsletter@massorchid.org to post or advertise in the newsletter!

We are always interested in suggestions for speakers and topics, plus ideas for special programs for upcoming general meetings. Please email them to mos-board@googlegroups.com.

Find us on Facebook at www.facebook.com/massorchid and Instagram at www.instagram.com/massachusettsorchid.

President's Message

Hey Orchid Enthusiasts!

I hope you and your green minions have survived the recent temperature spike. As I'm writing this, it has finally cooled from the surface of the sun to an unpleasant 90 degrees F with 150% humidity that I know all the outdoor orchids are luxuriating in.

August is right around the corner, and I would like to remind everyone that plans to attend the August 6th Annual BBQ to RSVP as soon a possible! MOS will be supplying burgers and hot dogs (veggie burgers and dogs, too), so if you don't RSVP there's a chance that we may not prepare enough for everyone. Come hungry and byo chair. Can't wait to see you there!

The next few months are going to bring a lot of fun for MOS members. After the BBQ we have the annual auction culminating in the Annual Show in October. Some incredibly generous members have already reached out with some donations for the auction. Looks like we will have a great wine selection, as well as some art to go along with the smorgasbord of orchids. Get prepared for a really fun evening.

Don't forget to pay your dues and as always, if you have any donations, questions, or interest in volunteering or organizing one of the MOS events; contact a board member!

-Dina



MOS Show Table Results, July 2022

Judges: Brandt M. George B., & Steve K.

Scribe: Brigitte F..

Total Ribbons: 7

Name of Orchid	Name of Exhibitor	Light L,M,H	Temp W,I,C	Growing Location: Lights, Windowsill, Greenhouse? Judges' or Exhibitor's Comments?
Den. Ise	Brandt M.			Greenhouse
Vanda hybrid	Brandt M.			Greenhouse
Neof. falcata 'Holy Cow' x 'Princess Masako', AM/AOS	Ron M	L	W	
Group of Cattleya species	Brandt M.			Greenhouse. C. leopoldi - grows on a beach. C. warscewiczii - hold water until you see buds.
Pfrag. Fliquet 4N	Brigitte F.			
Paph. Magic Lantern	Amanda L.	W	I	
Den. pseudoglomeratum	Bob F.	L	I	

Congrats to July People's Choice winner Brandt!

Meeting attendees were treated to an extra-ordinary display of some of Brandt's currently blooming Cattleya species (below). Among them was winner, C. warscewiczii, also known as C. gigas. Regarding culture, Brandt says:

"Cattleya gigas can always be identified by the two golden spots on the labellum. This is passed on to its hybrids. To get it to bloom, withhold watering in the spring until the new growth is 4" tall.

The plant needs a good root system going into the blooming season from its previous growths to support the harsh treatment necessary to trigger it to bloom.

Large, colorful and fragrant. A reliable late spring/early summer bloomer."



C. forbesii
John Miller



Den. pseudoglomeratum,
Bob F.



Paph. Magic Lantern,
Amanda L.



Phrag. Fliquet 4N, Brigitte F.



Den. Ise, Brandt M.



Vanda hybrid, Brandt M.



Neo. falcata Holy Cow x
Princess Masaku,
Ron M.

UPCOMING EVENTS

Monthly AOS Judging at Tower Hill

06 Aug 2022 10:30 AM
 Tower Botanic Garden,
 11 French Dr., Boylston, MA
 Please see our website: nejcaos.org

MOS Annual BBQ

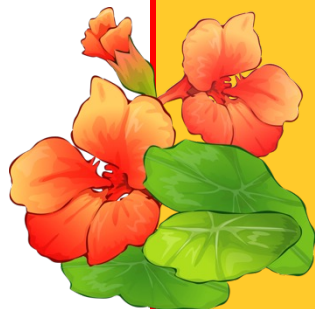
(In lieu of August's Monthly Meeting)
 06 Aug 2022

Monthly AOS Judging at Tower Hill

03 Sep 2022 10:30 AM
 Tower Botanic Garden,
 11 French Dr., Boylston, MA

MOS Annual Auction

13 Sept 2022 7:30 PM
 Sons of Italy, 117 Swanton St.
 Winchester, MA



Don't miss the MOS BBQ!

When:
Saturday, 6 August, 12 - 4 pm

If Saturday looks terrible - we'll try again Sunday.
 Expect a rain delay email no later than 9 AM
 Saturday. No email - the party is on.

Where:
 Home of Bob and Marcia Richter
 283 Elm Street
 North Reading, MA 01864

Why:

- Annual BBQ - let's socialize outside
- We want to see the Greenhouse
- Because it is summer

Particulars:

- Society provides hotdogs/hamburgers/drinks. Members bring appetizers (last name A - F), desserts (G - L) and salads (M-Z)
- Bring a lawn chair for yourself

Please RSVP by Saturday 30th, July for food planning purposes

2022 MOS Meeting Program

- Jan.** Mike and Daryl – repotting and mounting
- Feb.** Fred Clarke of SVO – Becoming an 80 Percentile Grower
- Mar.** Glen Decker (formerly Piping Rock Orchids)
- Apr.** Francisco Miranda – Miranda Orchids
- May** Carrie Reimann – The Orchidophile
- June** Tim Culbertson
- July** Kristin Uthus – New World Orchids
- Aug.** MOS BBQ
- Sept.** MOS Annual Auction
- Oct.** Bob Winkley
- Nov.** Bob Cleveland Orchids
- Dec.** Annual Holiday Party!

FEDERALLY THREATENED ORCHID DISCOVERED IN VERMONT

Reprinted from the Agency of Natural Resources, Vermont Fish & Wildlife Department, June 8, 2022



Botanists with the Vermont Fish and Wildlife Department confirmed that a population of small whorled pogonia—believed to be extinct in Vermont since 1902 and listed as threatened under the Federal Endangered Species Act—has been documented on Winooski Valley Park District conservation land in Chittenden County.

“Discovering a viable population of a federally threatened species unknown in our state for over a century is astounding,” said Vermont Fish and Wildlife Department Botanist Bob Popp. “It’s Vermont’s equivalent of rediscovering the ivory-billed woodpecker.”

The small whorled pogonia is a globally rare orchid historically found across the eastern states and Ontario. Previous searches for the species in Vermont have been unsuccessful. As with many orchids, little is understood about the species’ habitat needs. Populations in Maine and New Hampshire are found in areas of partial sun including forest edges and openings.

“A challenge of locating rare orchid populations for conservation is that so much of where they grow is determined by things we can’t easily see or measure, like networks of fungi in the soil,” said Vermont Fish and Wildlife Department Assistant Botanist Aaron Marcus. “These kinds of discoveries are only possible because of the vibrant communities of enthusiasts and professional botanists who work together to understand and document Vermont’s plant diversity.”

Marcus says the department was first notified of a possible small whorled pogonia population in Vermont thanks to the observations of two community scientists: John Gange of Shelburne and Tom Doubleday of Colchester.

“John is a passionate and skilled botanist who specializes in orchids and closely follows the sightings people report on the community science app, iNaturalist,” said Marcus. “John noticed that birder and retired greenhouse manager Tom Doubleday had used iNaturalist to ask for help identifying an unfamiliar wildflower last July and reached out to us with the news that the small whorled pogonia had very likely just been discovered in Vermont.”

Popp, Marcus, Doubleday, and Gange returned to the site together this spring and confirmed the presence of small whorled pogonia, which was in bloom at the time. Rare orchids are at high risk from illegal collection and accidental trampling by passive visitors, according to Marcus. To protect the pogonia's location from potential disturbances, Doubleday removed the public coordinates from his post using iNaturalist's privacy settings.

The department's next steps will be to work with the Winooski Valley Park District to look for the small whorled pogonia on nearby conservation land and monitor the population to make sure this species has the best possible opportunity to flourish in Vermont's portion of its native range.

"We're incredibly fortunate that this small whorled pogonia population is on land protected by the Winooski Valley Park District," said Popp. "It speaks to the importance of habitat conservation. When we conserve a piece of land, we rarely know all the species that are there, but we do know that conserving intact natural communities yields the best odds for supporting Vermont's biodiversity, from common species to rare ones."



Last winter the International Odontoglossum Alliance Journal ran an article and tributes to MOS' honorary life-time member, John Miller, which you will find this month on Page 8. If you, like this newsletter editor, are unfamiliar with John's legacy as an orchid grower and breeder and contributor to the MOS board, at one time or another you've probably heard about John in the news, in articles or books about the Apollo Space Program. Occasionally, Brandt peppers us with John's name at monthly meetings about his spectacular orchids and because Brandt and John are long-time close friends, I asked Brandt to give me a forward about John's affiliation with MOS, and how he got started with orchids. Here's what he said:

John started growing orchids as a newlywed. His mother-in-law was an orchid grower, and now that John was family, she gifted him his very first orchid. There was a small caveat however; if he killed it, it would "reflect badly" on him. No pressure there?

His work brought John to MIT and into the Mercury Apollo Project, where he designed the navigation system. At that time, the American Orchid Society's headquarters was located at Harvard University; MIT's next-door neighbor. It also happened to be conveniently very close to John's work, so whenever he could manage, John spent his time over at AOS and soon became good buddies with the AOS crew. This is how John learned how to keep his orchid (and marriage) in good shape, you might say.

When it was decided to create the Massachusetts Orchid Society John was invited to the second-ever meeting. To this day John is still a member of MOS.

John and his wife Janice co-chaired one of the very first MOS' Eastern Orchid Congresses. EOS drew orchid dignitaries from abroad and around the country to attend their educational seminars, meetings and judging shows. An interesting fact of note; Janice designed the EOS medal, which is still our MOS medal today.

Brandt says to look into AOS articles about John, but if you really want an insider's view, ask Brandt for some stories about the man. He told me, for instance that once John lost nearly his entire greenhouse from freezing while he was away in Houston solving the navigation crisis to get Apollo 13 back home. Imagine getting the call from Janice; "not now, honey - I'm saving the astronauts lives". Janice managed to bring some of their prized cultivars into the house. Ruminating on his losses, John would later say, "it was an opportune time to update my collection."

Now turn the page and enjoy reading about John.

John E. Miller – Salute to a remarkable man!

Robert Hamilton

The International Odontoglossum Alliance, (IOA) and its successor, the International Odontoglossum Alliance Journal, (IOAJ) owe a debt gratitude to a remarkable man, John E. Miller. John, now an active nonagenarian, currently resides in Florida. John Miller, one of the founders of the IOA remains a resource for its continued success.

The IOA originated as a membership organization and for more than 30 years John served as Secretary/Treasurer and Newsletter Editor. The archives of The International Odontoglossum newsletters he edited and published remain accessible and searchable via the website: <http://www.odontalliance.org/>. The ascension and dominance of the world wide web as the resource for communication saw John Miller help shepherd the IOA's evolution to the IOAJ, a bilingual publication in English and Spanish with free access.

John Miller's career and accomplishments are extraordinary and include putting men on the moon, (see the appended [The Herald News story, How Westport resident John E. Miller helped America land on the moon](#)).

To list a few, John served as a private in WW II and later the US Air Force, after receiving an MS Degree from the Aeronautics and Astronautics Department, Massachusetts Institute of Technology. In 1959 Miller joined the staff of the M.I.T. Instrumentation Laboratory (now The Draper Laboratory), where he was involved in the development of a direct digitally encoded accelerometer for the Polaris missile guidance system. Following successful flight demonstrations of the guidance system, he began work in 1961 on the Apollo guidance, navigation and control system for the flight vehicles to the moon. He was appointed Technical Director for that systems development at M.I.T., and had full responsibility for its hardware, as well as the checkout software in the

Command and Lunar flight vehicles. John Miller built up an organization to complete the design, prototype construction, and testing at M.I.T and to monitor its production and testing in industry.

John was one of the principal founders of Intermetrics, now AverStar a software company founded in Cambridge, Massachusetts in 1969 by several veterans of M.I.T.'s Instrumentation Laboratory who had worked on the software for NASA's Apollo Program including the Apollo Guidance Computer and served as President and Chairman of the Board.



Oda. John Miller 'Apollo'

Following retirement, John volunteered as Adjunct Professor mentoring engineering startups and serves on the boards of several public and private companies including the International Odontoglossum Alliance. And there's yet another accomplishment worth adding, albeit a bit out of context; two years of study in the culinary arts of cooking and baking!

As previously noted, John Miller's seminal contributions to the IOA and IOAJ are largely responsible for their success. His passion for orchids and organizational skills remain extraordinary.

Tributes from John's colleagues and friends follow.

Stig Dalström

A heartfelt Thank You John, for your tireless support, both administratively and financially, which kept the Odontoglossum Alliance alive for so many years! If it hadn't been for you, we may not have 'survived' and grown into what we are today!

All the best,
Stig Dalström

Dr. Richard Kaufman

Ah! The wonderful John Miller!

Simply Google him to see his extraordinary accomplishments. But beyond that there is John that gracious, modest, delightful human being. We all know of his skill growing Odonts. I have a number of his divisions. But equally important, I have several 15-foot-high clones of his *Sciadopytis* (Umbrella Pines) from this consummate propagator of a monotypic species.

More pleasurable memories: John would sleep over at our house the night before we went to ORCHID meetings in New York. By then he was taking cooking classes and his risotto dinners at our house were beyond delicious. The breads from his baking classes were no less a treat.

His business successes are well known but his funding little startups at MIT were noble passion. This was not as much an investment as his desire to promote ideas in ventures in young people. Well before the world of hedge funds. I could go on, but it would embarrass him because modesty and self-assessment are among his most wonderful qualities.

To honor him is a privilege.
Richard and Susan Kaufman

Bob and Cassandra Burkey – Kamuela Greenhouse/Specialty Orchids

“A great guy, sweet as all get-out, one of the good guys. Always fun to be around: solid, dedicated, honest with no agenda, hard-working with a pure love for odonts.”

Excerpts - Bob and Cassandra Burkey

Tim Brydon, The formative meeting for the Odontoglossum Alliance occurred circa 1985 in Tim Brydon's living room. Tim remains a significant force in the hybridizing and growing of Odontoglossum hybrids.

I first met John at an orchid congress in England in the mid 80s at a banquet. He was sitting next to Dr. Howard Liebman. All the yanks were at the same table so we could understand each other. John loved odonts. As the years past I started to see and socialize with John. He frequently came to San Francisco for the San Francisco Orchid Society Show and the coincidental Odontoglossum Alliance meetings and fund-raising auctions. Over the years I grew some of John's crosses to a size that would help him continue to grow them in the Boston area. John, I miss your visits. The shows aren't the same without you.

Tim Brydon

Tom Perlite, Golden Gate Orchids,

I met John Miller many years ago at my sales booth at the Pacific Orchid Exposition in San Francisco. He was looking for Odonts for his collection back home in Massachusetts. What struck me most about John was his courtesy and respect, amongst the chaos of an orchid show. John would always visit the nursery when he was in San Francisco, looking to add to his collection, but also just to say hello. John is the ultimate gentleman, treating all he meets with his friendly and courteous demeanor. John would always ask for my advice and suggestions on plants, listening to what I was saying, instead of telling me what kind of hybrids or crosses I should be making. His dedication to the IOA and his consideration of all the people he meets is an inspiration to me.

Tom Perlite

Juan Felipe Posada, Colomborquideas, International Odontoglossum Alliance President

I met John years ago, as a member of the International Odontoglossum Alliance, during several of the Alliance meetings. What a great person, very friendly and completely involved in the Alliance, since its foundation, he acted as our Secretary, Treasurer and Newsletter Publisher for a very long time. With a complete dedication in all senses, his efforts to the success of our group are to be admired.

One meeting with John that I remember the most, was in Homestead where I was attending the Redlands Orchid Festival. John came with his daughter, we had lunch, that he obviously paid for, without allowing me to do so. Then we had a long conversation about the Alliance and the future of the group. Always optimistic and dedicated to doing anything to encourage new members and growth of our common loves: Odonts and allied genera.

John was not an avid hybridizer, but I remember that in one of the Alliance meetings he donated some flasks to be auctioned. On that occasion I bought some flasks of crosses of his Oda. Trish (Star Trek × nobile). Today at my nursery, Colomborquideas, these Odontiodas have turned out of excellent quality. Oda. Trish is also a great parent.

Today all of us members of the International Odontoglossum Alliance must express our most sincere thanks to John for all his efforts to push the group to become what we are today. Without all his work for the Alliance in the early days, we would not be the recognized organization that we are today.

Thanks, John, we cannot express in due form all your commitments to this group.

Juan Felipe Posada

Andy Easton, New Horizon Orchids

I am honored to be asked to make a few comments about John. When we first met, it was at Cal-Orchids back in the late 1980's. He came with a formidable reputation, and I was just in the process of re-establishing my nursery, Geyserland Orchids, in Rotorua, New Zealand. John had inherited responsibility for the International Odontoglossum Alliance newsletter and asked me to be the "Down-under" correspondent. I, unfortunately, had to decline. My wife was terminally ill with cancer, I was trying to establish a new nursery from scratch, had two kids under the age of five and I hardly knew what a computer was. My typing was more laborious than handwriting, so I begged off. John was disappointed and commented that he would just have to ask Ron Maunder to assist. I laughed and told him he'd be disappointed.

At Eric Young's behest, I reluctantly agreed to become President of the Orchid Council of New Zealand and steer the country towards hosting the 13th World Orchid Conference in 1990.

During the Geyserland Orchids' days, Odonts flourished in New Zealand and many exciting new hybrids like Alexanderara Hec Hazelwood, six awarded, Wilsonara Tiger Answer, seven awarded, Vuylstekeara Fall in Love, eight awarded and Odm Anna-Claire with eleven awards led a parade of quality new Odonts. John would be proud of what came out of Geyserland even if he received no written copy!

Now, as far as Odont hybridizing goes, John clearly favors quality over quantity. But we have some totally splendid Oda Trish clones at Colomborquideas and believe me they are being used. Bob Hamilton honored John by naming the hybrid Oda. John Miller (yes, it's been a Wilsonara etc. previously due to the "taxidiots") after him and it is a pathway to warmer growing Odonts for which the world is craving. We are just beginning to see the Oda. John Miller offspring and they are splendid. Two months ago, I saw a plant at a distance at Colomborquideas. It was so floriferous, I had to go look. The said plant was Cyrtochilum povedanum × Oda. Trish and it is something. Fifteen branches and 79 blooms. Now, after 60 days we see at least so far, three pods swelling. If this line establishes itself surely, we can come up with a new intergeneric name.... maybe Millerara!

John, there would not be an IOA today without your sterling efforts over more than thirty-five years. You are to be commended for your tenacity and thanked for your magnificent contribution to the Odontoglossum Alliance and its aficionados.

Andy Easton

Bob Hamilton, Anecdotes

Bruce Cobbledick recently spoke with me about the origins of the International Odontoglossum Alliance. In those days Bruce was proprietor of Unicorn Orchids, an advocate, cultivator, and knowledgeable resource about Odonts. It was Bruce who first proposed organizing the IOA. Our group was naive about what it took to run an organization. Soon John Miller came on board and began creating order from the chaos. Bruce shared these words, “when John Miller came on board, I suddenly realized there was an adult in the room”.

Dr. Howard Liebman shared a story about dining out in Glasgow while attending the 14th World Orchid Conference. The Liebmans, the Posadas of Medellin, Colombia and the Millers of Massachusetts dined together one night. The conversation drifted to Estra, a plastic injection company in Medellin for which Juan Felipe served as President. Miller casually asked for a few metrics of the Estra operation avoiding any financial questions. Within minutes Miller presented a number to the table for the annual sales revenue of Estra to everyone’s surprise. He was very close to “spot on”.

Howard Liebman, John Miller, and I decided to visit Frae and Roy Wittwer, Proprietors of Sequoia Orchid located in Eureka, California, a small city in Northern California. Sequoia was producing many fine Odontoglossum hybrids in those days. The Wittwer’s hospitality was legendary and expected us for dinner. Eureka is more than a five-hour drive from San Francisco, much of it through scenic redwood forests. When it became clear we would be late Howard pulled out his mobile phone to call and give an update – no service. I pulled out my mobile and, like Howard I had no service. John was driving and he leaned over and said, “there’s a bag under the seat”. I reached down and found a flannel bag with a draw

string. In it was a Motorola mobile phone, seemingly ancient given the flip-phones of the day and likely from the early 1990’s. It was large and looked like a military walkie-talkie. John’s call got through on the first try!

On John’s visits to San Francisco to the orchid show a group of us would meet up for a dinner. It is not easy to get into a good restaurant in San Francisco on a weekend evening. Invariably we’d be in a line waiting for a table. John would casually walk up and down the line chatting with people he’d never met asking them about themselves. As someone who studied and practiced the culinary arts John often asks to see the kitchen and meet the chefs. His curiosity and charm always won the day. I never witnessed a refusal.

John helped run the auctions of donated plants that followed those early IOA meetings keeping a spread sheet of who, what and how much plants went for. It was proceeds from these donated plants that largely funded the IOA newsletter publications. From John, I learned the importance of offering and serving wine before a fund raiser.

To sum it up, John Miller knows the science of people and how to make things work. His persuasion is kind, methodical and effective. Most of all he’s a fun guy who enjoys a laugh. Hats off to John Miller and thanks for the memories,

Bob Hamilton

How Westport resident John E. Miller helped America land on the moon

Reprinted from the Herald News,
Westport MA - July 18, 2019

by Linda Murphy
lmurphy@heraldnews.com

WESTPORT — On July 20, 50 years ago, Neil Armstrong and Buzz Aldrin made history when they stepped out of the Apollo 11 lunar module onto the surface of the moon. One of the key men behind the historic moment that captured the world's attention was Westport resident John E. Miller, a mechanical engineer whose MIT team designed the Apollo Guidance Computer.

A couple of months after President John F. Kennedy's 1961 speech to Congress issuing his goal of seeing a man walk on the moon by the end of the decade, Miller and his team at MIT's Instrumentation Laboratory in the Aeronautics Division got to work to make it happen.

"Nobody had navigated outside the Earth. There was a lot of new math that was employed, a lot of new algorithms that were employed. There was just a lot of creativity," Miller recalled.

At the time, the Instrumentation Laboratory was working on inertial navigation, a method of navigating that would be used in intercontinental ballistic missiles.

"NASA chose the laboratory as the leading people in navigation to do the guidance navigation control system for both the (lunar) vehicles," said Miller. "It was the first contract of the Apollo program."

At first, Miller was in charge of the inertial measurement unit, but over time his scope expanded

to the hardware side of the guidance navigation control system. Another team would work on the software for the system.

"This was the first time that there was going to be a real computer boxed up to do a job, and not only that, it was the first one to have integrated circuits.

Before that there were all individual transistors," said Miller. "We took a chance on getting an integrated circuit we could use as a building block to make the whole thing smaller."

The hardware system had a general central computer, the inertial measurement unit that kept the navigation coordinates fixed, three meters to measure acceleration and two optical instruments: one with a wide field of view and another with a narrower field of view and



NASA gave John E. Miller a framed U.S. flag and crew patch that were carried to the moon during the last American lunar mission in 1972 for helping to build the technology that enabled the first moon landing in 1969. (Herald News photo | Dave Souza) *The Herald News*

a telescope to take a citing on a star for navigation. A display and keyboard enabled communication with the computer. "There were nouns and verbs. So you named what you wanted to do and you gave it a verb to get the action done," said Miller. "All of this had not been done before. The biggest things that had to be done were in the computer. The other parts of

the system (inertial navigation) had been done pretty much before.”

Unlike the rest of the country, Miller’s team’s celebration didn’t happen when the astronauts walked on the moon, but when Aldrin and Armstrong arrived safely back on Earth.

“We really waited until they landed,” Miller said. “When the parachutes came out we knew they were safe. We were really pleased that things went as well as they did.”

Looking back on the historic moment today, Miller said almost everyone he’s talked to who worked on the Apollo program considers it to be the height of their careers.

“It was a wonderful program to work on,” Miller said. “It had tremendous support from the American public, Congress. They had the schedule to get it done, they didn’t argue with you, we were able to make decisions really quickly and everyone really worked to get the job done.”

On weekends, Miller would take phone calls related to the project at his summer cottage and during the week he was constantly traveling to labs in various parts of the country that were working together on the Apollo project. The people involved were “really competent,” he said. “Everyone worked toward the goal and worked really hard.”

Everyone at the lab embraced this project because it captivated a generation of Americans and the engineers could talk about it because it wasn’t related to weaponry, Miller said.

Before Apollo 11 landed on the moon, Miller said he would give talks to the public about how the moon landing would happen.

“I had to describe how we’re going to get around the Earth, how we’re going to leave the Earth and then how we’re going to go to the moon,” Miller said. “Most people didn’t have the foggiest idea of how we were going to do it so they really enjoyed it. They were really much better prepared when we started to do the landing, what to look for and how it was going to be done.”

Miller said there was never a moment during the work when he thought the moon landing was an impossible idea, but a real setback came when three astronauts died in a fire inside the Apollo 1 command module during a test. “People were in shock over it, but they pulled together and we looked at everything that could possibly burn and changed it,” Miller said. “We didn’t have much in the guidance system that had to be changed. There were more items by the manufacturer of the capsule that had to be fixed.”

In a home bookcase, Miller has a collection of some of the equipment used to make the Apollo 11 Guidance Computer. He also has a framed U.S. flag and crew patch that were carried to the moon during the last lunar landing mission in 1972, given by NASA in honor of Miller’s contribution to the space program.

As for the technology as compared to today, Miller said there’s more computing power in an Apple Watch than his team had for the Apollo 11 mission. “Now people talk about gigabytes. We were in kilobites,” he said.

Miller left the MIT labs in 1969 to form the engineering company Intermetrics Inc. with some of the people who worked on the Apollo Guidance Computer, but he remained involved with NASA by serving on its advisory council.



•THE AOS CORNER•

**Greenhouse Chat with Ron McHatton**

Orchid related questions, answered by AOS experts.

Click [here](#) to watch now.

Note the specific times below if you wish to watch or listen to those topics.

- 01:03 High temperatures and humidity
- 03:56 Best time to water in high temperature
- 05:13 Water quality Distilled, RO, tap water
- 11:22 Vanda how to get it to bloom
- 13:10 pH levels

**Seasonal Orchid Care
July/August**

Click [here](#) for Checklist

Organizing orchid culture and its chores by season is a convenient way to make sure that your orchids get the proper care at the right time. Becoming in tune with your plants' growth cycles creates a connection with the natural world and makes you a better grower.

Officers, Directors & Committee Chairs

Officers

President	Dina Deresh	dinad@massorchid.org
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