

**Night Sky Network Telecon:
Astronomers Without Borders and the Global Pairing Program**

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Coordinator: Thank you for standing by. At this time, all participants are in a listen-only mode until the question and answer session of today's conference. At that time, you may press Star 1 on your touchtone phone to ask a question. I would like to inform all parties that today's conference is being recorded. If you have any objections, you may disconnect at this time. I would now like to turn the call over to Ms. Vivian White. Thank you. You may begin.

Vivian White: Hey. Thanks so much (Jennifer). Hi everyone. It's Vivian White here from the NASA Night Sky Network. I'm calling you from the Astronomical Society, the Pacific in San Francisco California. I'm really excited to present this teleconference tonight. We have two great guest speakers, Mike Simmons and Leo Heiland from Astronomers Without Borders. They're going to be discussing their latest initiative to bring US clubs closer to clubs from around the world. It's called the Global Pairing Program and they've got a lot of great things to tell us about it.

So before we get started, I want to make sure everyone can view the presentation slides. In case you don't have them up in front of you, you can download them or view them online at - we have a bitly link here. It's bit.ly/teleconawb for Astronomers Without Borders. So one more time. [Bit.ly/teleconawb](http://bit.ly/teleconawb) and if you have any problems along the way or you can't get there, feel free to email us. We'll be watching our email at nightskyinfo@astrosociety.org.

So my favorite part of the evening. For a brief minute, I'd like to hear from the folks joining us today. So (Jennifer), if you could open up the lines and if you guys out

there on the call could just give us your name and tell us where you're calling from or your club you're with, then we'll get an idea of who's listening in.

Coordinator: One moment while lines are opened. All lines have been opened.

Man: Hello Vivian.

Jim Small: This is Jim Small from the Saint Louis Astronomical Society.

Vivian White: Hey Jim.

(Stewart Myers): Amateur astronomer - (Stewart Myers) calling from Amateur Astronomers Incorporated in New Jersey.

Vivian White: (Stewart), I'd recognize your voice anywhere.

Darien O'Brien: Hello Vivian. Darien O'Brien from Lakewood, Colorado with the Darien O'Brien Astronomy Club.

Vivian White: Great. Hi Darien.

Teri Smoot: Teri Smoot from Cameron Park Observatory.

Vivian White: Right up the hills.

(Andy Sherwood): (Andy Sherwood) from the Los Angeles Astronomical Society. Hello.

Vivian White: Hey (Andy).

(Skip Bird): (Kip Bird) with West Minster Astronomy Club.

Vivian White: Hey (Skip).

(Skip Bird): Hey.

(Rob Jorsky): We also have (Rob Jorsky) from the San Jose Astronomical Association here in San Jose, California.

Vivian White: All right. Hi (Rob).

Marion Weiler: We have Marion Weiler from the San Mateo County Astronomical Society with a group of seven.

Vivian White: Great. The Mateo Club is really active. It's nice to hear you guys.

(John Hasley): Hi. (John Hasley) with Iowa County Astronomers in Wisconsin.

((Crosstalk))

(Joe Epcot): (Joe Epcot) from Rochester Astronomy Club Minnesota.

Vivian White: Hi everybody. It's so great to hear your voices. I know there's some more of you out there.

(John Hasley): (John Hasley) with Iowa County Astronomers in Wisconsin.

(Samuel): My name is (Samuel). I'm with (unintelligible) High School Observatory and I represent about 30 people that volunteer with us.

Vivian White: Hey. That's great to hear. Welcome. Okay. Well, we might close it up and get started then.

Coordinator: One moment please. Speakers, your lines are open.

Vivian White: All right. Thanks. So it's so great to hear everybody out there. If this is your first teleconference with us, we welcome you. If this is your 50 teleconference with us, welcome too. Just follow along with those slides that are hopefully on your computer now and there will be time for question and answers at the end of the talk. So if you'll just give me one minute, I'll give you some updates on news for Night Sky Network members. Our survey of amateur astronomers is closed and it's being analyzed as we speak. We had almost 1,000 responses which was wonderful and there's a lot of great feedback and information there. We're taking our time digesting it all and we'll get that information out to you when we finish. Thank you to everybody who participated in that.

We're also working on a few bugs and the website. So we're really sorry. There have been a couple of delays in getting them worked out but rest assured they will be addressed. We really, really apologize for the delay but they're being worked out now and we're about to ship out some toolkits. So remember to log your events to qualify for the latest round. If you haven't received one in a long time and you're wondering why, it could be that you've got them all but it might be that we've made a mistake so if you want to contact us if you think you should be receiving one and aren't, just give us an email at nightskyinfo@astrosociety.org.

Also remember that by logging your events, you're going to qualify to win one of our prizes for this round and this quarter we have a Night Sky Adventures take home kit from a program called Family Astro that the Astronomical Society of the Pacific runs. It's adventures that you could do with families and they're really relevant for astronomy clubs who have family programming. So we hope you win one of those. We hope you get your events logged. We were going to be doing pins here. You should be hearing from us in the next few weeks about pins. So keep an eye out for that and now, it's my great pleasure to introduce our speakers.

Mike Simmons and Leo Heiland from Astronomers Without Borders. Mike Simmons is the President of Astronomers Without Borders and Leo Heiland is championing the Global Pairing Program and we're going to discuss some of their latest initiatives from Astronomers Without Borders with a special attention to this new club focus program that's designed to bring clubs together from around the world, astronomy clubs from around the world.

A little bit about Astronomers Without Borders and then I'll let Mike give us the rest of the details. Their mission is to connect to people around the world through this universal interest we have in astronomy. They foster understanding and goodwill across national and cultural boundaries by creating relationships through astronomy and so the Global Pairing Program goes right to the heart of that mission and we're going to let these guys tell you all about it. Mike and Leo, would you like to begin.

Mike Simmons: Well, this is Mike and I will begin just for those who don't know about Astronomers Without Borders or aren't sure about what we do and I think Vivian gave a good introduction to that. The idea is that we all share the same sky and wherever we are around the world, there are people that are fascinated by astronomy and there's enthusiast around the world in every country and the idea is to bring people together to share our experiences and to learn from each other and there is a great deal of learn for those of us in developed countries from others in developing countries as well. Often very surprising but there's always something new.

So we have different kinds of programs in which we share resources with each other and things that we do together, observing if there's an event or a conjunction or something, people or clubs around the world, essentially, together and sharing their reports and things like that and so as Vivian said, this goes right to the heart of it and the clubs are the focus. It doesn't have to be the whole club of course. It's usually a couple of individuals who are interested in doing it but the Night Sky Network is a perfect place to start. So with that, Leo who is the Program Manager for this special new program, I'll let him go ahead with it.

Leo Heiland: Well, thanks. Thanks Mike and Vivian. I trust you can hear me okay and I'll continue on if I hear otherwise. So the Global Pairing Program under Astronomers Without Borders is exactly that. A pairing program designed to bring various clubs around the world together and to exchange information and interests and grow based on that. So if you're looking at the foils, first of all, the comp foil, just the entry foil, we can pass that up now. The idea here is to share our interests in astronomy and science and if you go onto what is identified as foil number two, we can talk a little bit more about what we're doing.

Mike identified this need to exchange information with others and a desire by many people to do so and we also felt that and when we first got into the program that there were a great number of very experienced individuals in astronomy in North America and particularly in the United States that were willing to share that information with others and we also had the vision that maybe there were some areas of the country where there might have been challenges or young people that were not as experienced. So we wanted to bring them together and expand the network and bring the together and this is the whole idea here.

So on the left, you can see I'm trying to show some older more experienced individuals and then various clubs getting together and maybe perhaps pairing up with these other clubs and schools and organizations around the world, particularly clubs, but like Mike said, probably individuals in small groups of 2, 3, 5, 10 people but what we're finding as we go through the program as well is that there's anything from very young elementary school children that don't know anything about astronomy and that do want to learn about it to very experienced, very mature organizations like shown in the middle of the slide, in the middle right slide, photographs and also the lower slides but we found out that by bringing them together, we can learn from them and they can learn from us.

So it's not just our mentoring others. It's actually our learning from each other and one of the things that we think that comes out of this most initially is a cultural exchange if you will in learning about those other people in those other areas of the country and then expanding from that and learning about our interesting science and astronomy. So if you would, go onto Photo 3 now.

Initially, we set this program up in January and we did go through a learning curve and we did have some miscues initially but we've now changed the program to the point that I think we're getting clubs very interested in the program. Right now we have the clubs listed on foil three and actually I think I have a couple more I need to add. International clubs that are requesting pairing with partners and you can see that they're all over. They're pretty much on almost all the continents. We've got the Uganda, Bangladesh, Jamaica, a number of clubs from India and that seems to grow almost weekly with India, Zimbabwe and other areas of Africa, Nepal, China, Morocco, the Philippines and so forth. Very dynamic group of people and some of them, like I mentioned, are very young groups. Some representing work in elementary schools and others being research scientists in China that are in a club. So quite a varied interest of people.

So if you go onto foil four, I've alluded to this already that we learned early on that the range of interest vary widely. Initially when we got into this program, we thought about developing a curriculum for the clubs and actually developing a syllabus and we quickly learned that that was a big turn off for this program. Most people didn't want that. They didn't want anything that structured. They didn't want to get into that motive of teaching. So what we did find is perhaps the best way to do it is to allow them to pair, as I mentioned, learn about the cultures, find out what interests they have and then develop their own program, if you will, or their own list of input experiences, their own lists of interests and develop something from that point.

So we've learned that that is the best approach and that seems to be working now. We have - I should've counted the actual number but we have somewhere in the neighborhood of 10 to 12 clubs paired today and a lot of those programs are just within the last two to three months but we are continuing to expand the list of people that want to be involved.

So if you go onto Slide 5, the question here is why should we get involved? Well, I think many clubs have people that do outreach -- sidewalk outreach I'll call it -- locally but this is the opportunity to do outreach across our boundaries that we have, across continents and across the seas and the exchange of information will be very rewarding and we really see this growing and becoming a very, very positive thing. You might look at it maybe as a sister city program but it's really not that. It's more. There will be more personal exchange than in those cases.

Also, I had another analogy of this kind of thing and that was I used to be a (HAM) radio operator many years ago and used to do a lot of international DX work and you got to really know people around the world and you really learned from that and gained from that and this is maybe similar to that and instead of sitting in an observatory by yourself looking at a bunch of nebulous somewhere or what have you, you can actually also continue to expand someone else's mind or learn from others.

So it's a very, very valuable way of doing outreach around the world and as I mentioned, we do want the agenda to be determined by the two clubs involved and they can expand it from there. We would like to get some feedback on those clubs as they do that so that we can find out whether the program is working and if there's anything else that we need to do to change our course in this program.

So the people that will be involved is typically small groups. Like we mentioned, one to three to five people and they will meet probably by Skype at the best times that they choose to meet and I'll talk about that a little bit coming up in the next foil but

the point I'd like to make here for you club leaders is that this is pretty much a low touch program. There's not a lot of management by club organization leaders that's needed for this because this is really those individuals. We'll say that we're using the clubs so to speak as the conduit to get the people together but we really don't think there's going to be much to manage from the club perspective. That would be an open thing. Let people get involved. If they want to expand it to something more formal, that would be certainly up to the clubs but the idea is just to bring people together and learn from each other.

So if you go onto the next foil, Item 6, or Foil 6, I mentioned time zones. When I first got into this program, I thought that time zones might be a big problem but it turns out that they can be a positive thing. So I have an example here if you're say, on the Pacific time area. That alliance with primary school hours or Pacific evening time I should say. For example, right now, this time would align with some primary school hours in places like India, Pakistan and Sri Lanka. So if you wanted to do actual classroom discussion or presentation by Skype to them, that's possible. Also, for those people that might be retired and have daytime hours available in the US, that could be night time hours for similar locations. So the time zone differences can be both a challenge and also a positive thing depending on how you utilize the time difference.

So the time to meet again is going to be dependent on both clubs needs and desires so that you can meet any time, you can just exchange emails, voicemails or whatever but the idea is to let that up to the club and the individuals involved. So languages is another area that can be a challenge. We're finding that the great majority of clubs have English speaking members. There are some clubs like Vietnam where maybe 50% of the members speak English but they would provide interpreters for any needs to speak to those or exchange information with those that don't understand or don't speak English.

The other thing that I didn't put in the presentation here but I will mention is that we also want to expand this program to what we call North America and include Canada for a good reason. They have a lot of similar interest of us but there are some other positive things there too. In Quebec, for example, there's a lot of French speaking people and even though it may be a slightly different French than some of the other areas of the world, they probably could understand each other considerably better than I could understand them. Meaning an English only person with a little bit of Spanish that I pick up along the way but in any case, the whole idea is to get them involved because we do have some African speaking and French speaking countries in Africa that we do want to get some clubs aligned with.

So we've identified the North American clubs are very well positioned to support the needs of this program and we really encourage your club to get involved and if you have questions on it, certainly we can discuss them offline or after the end of the call. The things that AWB, Astronomers Without Borders that is, can provide is we have the framework for engagement. We have an online website that we have established for applying for club pairing and that's working out well and it's growing quite nicely in the last few months. We can provide resources and references for engagement with the clubs. We have a number of areas that we can tap into if we have needed resources. We can also help with the initial meetings with the team leaders from each club, set up a Skype club with them, maybe a Skype test if you will, test call to make sure things work because some of these technology challenges can make it a little rough in the beginning.

We can also suggest topics. We can provide program oversight and some guidance if necessary and we also can find mentors with other experiences should you get into a topic where you need maybe a speaker or some other resource. I mentioned doing the Skype checkout and then the other thing we want to do is follow-up on the successes and the changes that might be needed to the program.

So I've been going fairly fast here but let's go onto the next slide. That would be Slide 8. One of the program elements that's exciting is the resources that we can tap into. ASP, the Los Hombres observatory staff has actually offered to have some online time available for some of these engagements. We haven't really worked out all the details on that yet. We've talked to the folks at Los Hombres and we were actually going to do some check out of how to do that. Whether we can do it absolutely 100% live is yet to be determined.

That looks like that might be some challenge but we do have observatory time and if there's a club that wants to do some research or do some observing of something special -- particularly maybe a club in India that has very poor seeing conditions or maybe a monsoon season that lasts longer than it does in Arizona -- we can get them and I'm in Arizona by the way. That's why I mentioned that. So anyway, that's very exciting. We do think that will be a very positive thing and we look forward to getting that program put in place.

Now, the Galileo Teachers Training Program also has some resources and then other resources we do have available too. So some of the topics that might be included would be and these are just my thoughts. Certainly the clubs can come up with their own list is visual observing, understanding CC operations, CCD imaging, robotic observatory, operation planning, star charts and observing many more topics. Obviously, that's one of the things about this program is the topics are so wide ranging that we could have a list here that would be a couple of hundred of items long.

So our program vision, the goals are to enhance our understanding of the cosmos. This is onto Slide 10. I'm sorry. To improve observing techniques, to establish technical and practical resources for clubs, individuals, observers and students and to spark some cultural exchange with international astronomers and this is the one thing that drew me into the program myself and that was our ability to retain young students interest in astronomy and science by expanding the concepts of public and

private classroom curriculum. Although we don't have a curriculum, the whole idea is to keep them involved, keep them in the curriculum, keep them in science and hopefully make their world better for them and the rest of us.

So the commitment we need from the clubs is the same to a desire to improve the understand of cosmos, the desire to participate in a mentorship opportunity and this can go both ways. We can learn from them and they can learn from us and partners with international clubs spent delivery training materials, expertise and time tested resources and when I say training materials, this again might be virtual materials. It wouldn't necessarily be physical materials. Certainly we wouldn't stop that. We're not, at this point, asking for clubs to donate any materials or scopes or anything else to the paired partners but if you found out that there was a desire on both parts to do something like that, certainly that would be open to whatever you decide and then the other thing that's very important is to support this and develop and deliver on schedules.

When we decide to meet, to show up on time and to meet the meeting schedules that you and the other clubs set up. So with that, I'm 26 after the hour. They said I have 35 minutes. We are probably going to have a number of questions but one of the real important things to look at here is Slide 11 and that is, if you are interested, if your club wants to make an application for the program, we do have a website via the Astronomers Without Borders website there that's shown. We have the Global Pairing Program which is GPP Program link there as well and we also have a list of FAQ's which will answer a lot of the questions about how the program is run and what's involved and the specific application for participation is also listed there at the bottom. So that's what I have. Mike Simmons, as you know, is also and the line and I'm going to turn it over to him to see if he has any follow-up comments about the program.

Mike Simmons: Well, Leo, it's pretty comprehensive. So I guess we all see things from different perspectives too and having talked recently with the idea of connecting people

around the world and focusing on that, one thing I would say and I think I mentioned earlier, you never know what it is you're going to learn and what's going to happen but one thing we do know is that the clubs in other countries outside of the developing world -- which is most of the world -- have tremendous enthusiasm but there are some differences.

Now, most of what they do is outreach. They don't have the equipment usually and even when they do have the equipment to do individual observing and so on like we do here, it's not really what they're interested in. They want to share it with others and some of them are really organized and do outreach events that we could not really even imagine doing here with thousands of people and very organized going into schools.

Another thing is that outside of the US and Western Europe, the astronomy community and the club are primarily young people and it is unusual to see older people. So that is a big difference from here and people talk here about how can we get young people interested again because it's changed over the years since I was a young person a long time ago with young people and now we're older and the way to find out, I think, is ask the young people in clubs and other places. So there really is a lot to learn and it's like I keep saying, it's surprising. You never really know what to expect and that's what makes it interesting.

Leo Heiland: Mike, I was going to add to that comment and that is that we are seeing a lot of young interest and the thing that surprised me about mid year in this program is the overwhelming response internationally was much greater than the responses we were getting from the US. So we have a big need at this time to get more clubs involved from the US and Canada. It's amazing how they came out of the woodwork if you will. There was just lots of clubs taking application all over the world but I really had to work hard to get the US clubs involved. So I'm begging somewhat to ask you to consider this.

It is a low touch program from the standpoint of your management of your clubs but the opportunity and the enjoyment that I think members would find in this is a big rewarding experience. So I really encourage all of you listening to try this program and with that, if you don't have anything else Mike, we'll turn it back to Vivian I guess.

Vivian White: Yes. Mike and Leo especially. Thank you so much for telling us about this. I am excited just listening to all the possibilities. If I could ask the operator, (Jennifer), would you mind opening up the lines?

Coordinator: Yes. Absolutely. If you would like to ask a question, please press Star 1, unmute your phone and record your name clearly. If you need to withdraw your question, press Star 2. Again, to ask a question, press Star 1. It will take a few moments for the questions to come through. Please stand by.

Vivian White: So in the meantime, I was just wondering if you have had any clubs that have partnered and met each other yet? Have you had any first contacts?

Leo Heiland: Yes we have. We've had probably - I don't know, again, the exact numbers. Six or eight clubs, I think, are already exchanging emails. Some of them have tried to meet by Skype and had some problems which I mentioned but yes, they are starting to meet and they seem like they're moving forward. We're hoping that in another two months, three months, four months we can get some feedback that'll give us an idea of what's really going on. I'm not demanding that we get reports from them but I will be sending them emails and hopefully they'll respond.

Vivian White: Yes. Great.

Coordinator: We do have a question. Our first question is from (Patrick O'Brien). Your line is open.

(Patrick O'Brien): Hello. Can you hear me?

Leo Heiland: I hear you very clearly.

(Patrick O'Brien): Well, I'm (Patrick O'Brien) from the Darien O'Brien Astronomy Club in Lakewood, Colorado and it was a nice presentation Leo and Mike also that you were talking about because I was on the computer looking at your website and it looks like you put in a lot of effort and it was a nice presentation and my question is you mentioned earlier that there were more international groups than US groups involved and my question is, approximately how many worldwide groups are involved and how many US groups are involved now?

Leo Heiland: Yes. I'll see if I can - well, I'm going to have to count them but without actually doing that, I think pretty accurate in saying I think there's about 25 international clubs and we have about 10 or 12 US clubs.

(Patrick O'Brien): Is that right? Okay.

Leo Heiland: Yes.

(Patrick O'Brien): That sounds like it's a worth while project and that sounds very good and it's nice that you're trying to get all astronomy clubs worldwide versus America wide. So good job.

Leo Heiland: Yes. The whole intent right from the start is, I think, (Mike's) vision and I've got to give Mike credit for that because I retired from Intel Corporation in January and was looking for something to do in the way of keeping science and astronomy rolling in elementary school and middle schools and that kind of thing. If I had a teaching certificate, I'd probably go out and teach right now but I wanted to do something to keep kids interested in science and astronomy so I picked this up and I'm going to

continue for the next year or so on this with Mike and see if I can make this thing work and grow bigger.

As a matter of fact, we might have to at some point, get to a way we can automate it more because at this point in time, it's a lot of hand holding from my standpoint, a lot of emails back and forth and maybe we can automate it by making something like -- and this is a crazy thought -- but a dating site if you will where these clubs can date each other and they can exchange and get together. So yes. Thank you very much. I appreciate those comments and it is good.

(Patrick O'Brien): Yes. Nice presentation Leo and Mike.

Mike Simmons: Yes. So Leo, your last thing about a dating site, it's not too far from it. You know the idea is to match people and groups up. The difference is here, you're looking for matches of people that are very different and just want to find out what they're about but I'll mention that we have a lot of work going on, on the website right now. It's basically being redone. So we have a lot more capabilities with people finding reports and pictures and basically, a lot of ways of sharing. Think of it as a - well, I don't like to use the analogy Facebook because it will be organized which Facebook is not. So this will be the center for everything and there will be a great deal more sharing going on and this is just a more direct one. So more of one...

((Crosstalk))

(Patrick O'Brien): That sounds real good. Thank you.

Leo Heiland: Thank you.

Coordinator: Our next question is from (Stewart Myers). Your line is open.

(Stewart Myers): Hello. Interesting presentation. It actually sort of exceeded my expectations.

Leo Heiland: Well, I'm glad to hear that.

(Stewart Myers): Yes but you were saying in some of the topics you were saying you were talking about potential topics like robotic astronomy. I don't know how well that would go in some of these countries. They're under tech restrictions as I recall some of them.

Mike Simmons: You mean as far as sanctions?

(Stewart Myers): What I mean is that we're not third - there's a bit - it would be a little tricky dealing with tech issues. Let's say that.

Mike Simmons: Yes. Let me take this one because it's something I deal with all the time and the situation in countries around the world is that everyone's got internet now. What's interesting is that in many, many countries, nobody has computers. They access the internet through their phones because they weren't part of the computer revolution but everybody's got a phone now. Doing Skype is sometimes problematic as a bandwidth especially within video. The remote telescopes would be used in a joint session sharing...

(Stewart Myers): Okay.

Mike Simmons: ...and these are web based.

(Stewart Myers): Okay. I was saying before about when you were saying about things like robotic astronomy. I wasn't concerned about the Skype but I mean, giving someone pointers on how to build a robotics and what I mean is an observing system.

Mike Simmons: No. So the idea is that the clubs, they may have accrued telescopes. They may have no telescopes but they are explaining astronomy to people and what we do in clubs here is that we explain to people and we show them what we're doing with even

about photography and so on and it's really best when you're doing outreaches which is mostly what they do to be able to interpret what's coming from telescopes and space missions and so on. So the idea would be to have those people who know three color photography or photometry, they can show them right on the web there with the telescope live which is very, very exciting for people to do. It's fun for us here. We haven't done it and so these are live demonstrations that can be done. So that would be available tools but as far as building telescopes and other things, that depends entirely on needs but yes. We wouldn't try to get them to build a system like that.

(Stewart Myers): Right but I also noticed that one of the things you mentioned something about Pakistan. I wouldn't imagine that would be doing anything of an educational nature in Pakistan would be quite a challenge.

Mike Simmons: Well, this goes to exactly the reason I started Astronomers Without Borders. In fact, I was in a Skype call with a friend in Karachi, Pakistan last night less than 24 hours ago and he's our national coordinator in Pakistan, he's involved in the Karachi Astronomical Society, there's a very active club in Lahore and I was just Skyped into the meeting of a new club in (Fishower) which is up in the north that we all know about as being Taliban run and so on. The situation is actually very, very different than what we hear about in the news.

We hear about places where it's Taliban controlled and there are Madras's that are teaching only about the Koran and so on. This is such a very tiny fraction of the country that it's sort of a non issue. It's a very forward country, tech country like India and when you connect with a place like that, that's when you learn the reality of the situation. I go to Iran quite a bit and I use that as an example. That is what started this whole thing. Iran is probably the most pro American country I've ever been to. The astronomy clubs are all young people and by far dominated by women. The colleges, there are complaints about gender bias but it's the other way around because there are 50% more women in the universities than there are men and I

could go on and on and on. So the things that we hear about in the news are important but they're only coming from one tiny little section where it affects us.

(Stewart Myers): I see your point there. I mean, the reason I thought it would be a bit of a challenge is that you've heard the story about that young woman who very nearly got assassinated.

Mike Simmons: Yes and that was while the Taliban were in control of one particular area, one valley. I know somebody who lives in that valley now at the university. It's completely different. So there are pockets like that. I could say there are some pockets in the US that are a little bit behind and different things and it's much more so in other countries where they're less connected but this is - these are very isolated areas. When anyone goes to Karachi which is a city of many millions, a mega city or the other areas, one isn't - I even asked myself because there was a chance I would go up to (Fishower) and this is up in the northern territories and I said, is it safe for Americans and he said, when I'm there because he's from that area, he said, there are Americans in the hotel all the time.

(Stewart Myers): Well, this presentation has been very enlightening in more ways than I even thought. Thanks for setting things straight.

Mike Simmons: Well, and that's when I say there are surprises, this is what I'm talking about because I could go on and on with different places that I've been and how different it is but that's what the surprises are about. It's just very interesting.

(Stewart Myers): Well, I wish you luck with the project.

Leo Heiland: Thank you for asking the question. I think it's a very pertinent question and it really does show that we're going to break down some borders through and do some cultural exchange and that's very good.

Coordinator: Just a reminder, if you would like to ask a question, please press Star 1. Again, Star 1 on your touchtone phone to ask a question. Our next question is from (Sam). Your line is open.

(Sam): Hi. I actually wanted to reach out to you guys. This was to the teleconference. I thought it was fantastic listening to your slides and I actually really wanted to tell you a little bit about who I am and what I've done just really quickly. I'm actually a freshman college student here at RST in Rochester and like you, previously I was really into astronomy and actually, I have so much - it's been emotional for me in some sense. I was a high school student senior and I was really into radio astronomy and so I decided to get myself together and I really wanted to share the knowledge that I learned and I actually started a really quick hands on building program for high school students and I actually come from (unintelligible) school in Lower Manhattan and we've made tremendous amount of successes in which I actually just sum up really quickly because I'd love to get in touch with you.

Actually, a couple of us, we personally taught all of the sixth grade students at our school about astronomy in general in fact and I got a chance to teach just for about a month. I can't even believe the teacher allowed me to do that and I was able to give public outreach events through Nice Guy Network, done seminars and then I was able to really be able to reach out with a lot of students but the problem I've been running into a lot is no matter how much I - I've had so many sleepless days. I've spent hours calling people on the phone to see if they would help join our initiative and the whole thing about it is that in New York City and places like large cities where there's so many students, they don't actually really study astronomy and that's the problem.

Being in a K to 12 school, I can - being through that same school and the education system, I've noticed that astronomy isn't really emphasized and so when I brought it up, no one really seemed to care and no matter how hard I tried, no one really seemed to care. This is what the great thing about listening to things like these

where there's people who have very similar goals and similar - somehow people care somewhere around where it's not in New York City and it really makes me happy to hear that because I have not had any success so far but just to give a little bit of background just because I know that there's so much potential in New York City, when I was working in the Museum of Natural History, I taught astronomy to the public a lot and they found it absolutely fascinating and another one recently just before I came to college, I would volunteer for the (unintelligible) Festival and there was thousands of people who came out to the star gazing parties for a whole night and actually it happened for several nights actually and there were thousands of people who would come out and I got a chance to explain a little bit about what I did and everything like that.

I sound very enthused but I really wanted to - you said that people who are older and people who are younger, we're able to learn a lot from each other and in terms of what I can provide is because I'm trying and I've been trying really hard as a student who has been given the opportunity to teach other students, other peers my own age on a K to 12 perspective directly. It's a whole set right there and we had that exact opportunity but I haven't been able to have the resource to really make that happen and I'm not able to really commit my administration to think that somehow it's important enough for them to invest on even though I have so many somewhat progress so far.

In fact, we have three radio telescopes and I have a small team already at my high school and they're all trying really hard but there's nothing to really support us and we're trying. We have access to thousands of people and I feel like it's not really happening here. So that's what I'd like to ask you about but in terms of here, is anyone interested in helping, I don't know if can throw my email out there if that's okay or not?

Vivian White: (Sam) and we can get you in touch with other astronomy clubs in your area if that helps at all. Yes. Go for it. If anybody - we've got clubs from across the country

online. I don't know how that would help necessarily with your club but is there a question in particular you wanted to ask of these guys?

((Crosstalk))

Mike Simmons: I can say that it's very disappointing of course, but it's not very surprising. My own experience is that the school systems generally have the things that they need to cover. They have to teach tests to some extent. Adding curriculum is a very big deal in structured formal education and teachers may not be interested in it because they don't know astronomy. There are very, very few teachers who would be able to teach anything about it and that seems to contradict what we get because I've done outreach for 40 years and everybody is fascinated.

Some of those teachers or administrators may come to your star parties because they're interested but trying to fit it into a formal education system can be very, very difficult and it's very disappointing because we've found in other countries, developing countries where there is no science education, the teachers aren't educated in science that astronomy is a fantastic way to get people involved and excited about it but target...

(Sam): Well, I really would like to follow-up with you on that just real quickly because of course I ran into that barrier because I was pretty much fighting my administration every single day. I'm one of those leaders who - I don't like to really give up on setting a goal from when I set a goal for myself. So I annoy the hell out of them but that's to be expected but I realize and the cool thing about it is, yes, I am in college but when I go back in May, the cool thing is that most of what is happening in terms of readiness exams and AP exams are coming to an end and that is when most of the teachers are allowing me to take advantage of that and there's about a three week to a month window for general learning.

I don't think most teachers - I think a lot of teachers are okay with me teaching astronomy. We've actually made it a yearly program now where I'm able to do that and perhaps even this year we can probably reach out to more but I'd like to take an opportunity and I'm not sure if there are other student initiatives specifically that are in the country or in a major city. So I don't know in terms of just covering that entire idea, if anyone would ever like to use this as a guide in terms of that because we're making that happen right at the moment and last year, in that two months that we've been making progress, every day that's happened, those seminars and me teaching classes and in fact, our team teaching classes and creating a telescope program and creating an education program specifically through students to teach other students by the way, it all happened in those months where suddenly curriculums are slowing down a little bit and a tiny little opening but I feel like teachers and the administration, even though yes, the bureaucracy would be more vulnerable for a really big initiative like this to take advantage of that.

Mike Simmons: Well, yes. It's a big task. It's a little outside the peer review of the Pairing Program we're talking about here so you probably should let some others ask questions about that as well but I mean, I'll be glad to talk to you later and I don't know if Leo has some insight but Vivian can certainly hook you up with others all around the country.

Leo Heiland: I just want to say I agree with him and don't lose the passion. Keep it up. I think we should pass it onto some other questions though.

Coordinator: Our next question comes from (Karen). Your line is open.

(Karen): Hi Mike and Leo and Vivian. When I saw the list of members, astronomy groups, I saw Nepal and India and what came to mind was, wow, they must have really dark skies because here in San Francisco Bay Area, we have a hard time getting those dark skies and I just thought, maybe there's an opportunity here one way or another. That's all my input is.

Mike Simmons: Yes.

Leo Heiland: Certainly there's opportunities and some of those places in India have dark skies, others don't. They have big cities and some of these clubs are in big cities but we did have one club that is in a part of India that you probably don't even know exists and that's the other thing I'm learning about this is learning the culture and learning where these people are. There's this one part of India that's way out, buried like almost in Bangladesh and it's very interesting and we have a club there. I think we've already got them paired but they have very, very good night skies there but there's a lot of places in India that don't but again, like in Vietnam for example, they have a very long wet season and we had an individual there that was talking about in the summer time, they could exchange information with others and use that time to talk about other topics and so forth. So yes. There's a lot of opportunity.

(Karen): Thank you.

Leo Heiland: Sign up.

(Ken Lomb): I have a question. This is (Ken Lomb) from...

((Crosstalk))

Vivian White: I think we might have lost him. (Ken), are you there?

(Ken Lomb): Can you hear me?

Vivian White: Yes. You've come back. Now we can.

Leo Heiland: Now we can.

(Ken Lomb): Can you hear me?

Vivian White: Yes.

Leo Heiland: Can now. Go ahead.

(Ken Lomb): Okay. This is (Ken Lomb) from the (unintelligible) Ocone Astronomical Society also in the San Francisco Bay Area and has anybody canvassed these groups to see what it is that they need? I can imagine certain situations for example, if they have - I mean, here in the Bay Area in Silicon Valley, we're just overwhelmingly awash in everything but I can imagine that some places where the internet access might be a little iffy that maybe a shipment of some posters or something like that which they could put on display for their group would be helpful and we can pick up a lot of this stuff, essentially, for free in our area. For example, the US Geological Survey has their regional headquarters here just a few minutes away and we can pick up a lot of posters not only on astronomy and planetary science but also on geology as well and most of this stuff is free and if they want it, we're happy to pick it up and maybe ship it to them.

The other thing too is I think there's a need amongst these groups to identify a leader who could communicate with the rest of the clubs in the world and who can set agendas and define what it is that they want and maybe put out an inquiry as to if they have a need for something, put out an inquiry about what it is that they want.

Mike Simmons: Well, I can address that. One of the things that I thought from the very beginning was that Astronomers Without Borders would help to get telescopes around the world because I've traveled to a lot of places, I've taken my telescopes and binoculars and myself to places like Northern Iraq and other countries and it turns out that shipping is just too expensive to send telescopes but the idea of posters and other things like that is very good because many places they just don't have

anything like that and schools don't have any posters. There's nothing and this is most of the world we're talking about. The amateur astronomers sometimes they have no telescopes. They do outreach primarily and they do it with whatever they can get.

Magazines. I wanted to send my giant telescope collection overseas and it was just too expensive but there are programs that send books, books we have lying around. We have so much surplus. Doing things in the real world is a little bit expensive but if a club wants to send a collection of books they've collected, it's very easy to do with a group paying a little bit for shipping. So you're absolutely correct that these clubs all around the world and the schools that they support could use any of these resources.

(Ken Lomb): Here's my suggestion is that some kind of a posting as you can probably do it on social media or if not social media than on your website, is maybe a list of clubs and maybe a designated leader of that club and a posting of what it is that those particular clubs actually want. They want education materials, they want posters, do they want hardware, are they missing a 25 mm eye piece then that would not be incredibly expensive to send and things like that. So from my end, I would like to know some specifics as to what it is that they're joining this enterprise and what are they looking for to get out of this?

Leo Heiland: You've got a very good point and actually, on our website when a club makes application for pairing, we actually ask them the kinds of things they do, things they're interested in, what they'd like to accomplish. Unfortunately, most of the time it's a pretty terse answer. It doesn't really dig in. So we really need to find a better way to pull that out of these clubs but that's the other thing that we expect during the initial work of pairing and we may find pairs that don't work well together and we have to find somebody else but then the last, we are doing that.

Very good point and I think that's something we have to put on this new website that we're developing and do exactly that but again, you can only put so much information there and most of these people just want to have somebody in the US or North America to talk to, to learn about what we do over here. They know we have all the resources. They know we have a lot of knowledge and we go from there. Start with the cultural exchange and then go into whatever area is more interesting at that point but it's a good point. Very good point. Thank you.

Vivian White: It is. It is. I love all these questions. That's all the time we have for this evening I'm sorry to say but I want to thank you Night Sky Network members for your great questions and a huge thanks to Leo and Mike for giving us so much of your time and an excellent presentation and that's all we've got for tonight. You can find this telecon along with others on the Night Sky Network under astronomy activities. Just search for the word telecon and tonight's presentation with a full audio and written transcript is going to be posted by the end of this week just there. So thank you so much everyone. Have a great night and keep looking up.

Leo Heiland: Thank you Vivian.

Vivian White: Thanks guys.

Coordinator: Thank you for participating. That concludes today's conference. You may disconnect at this time.

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